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COTTON

THE TEXTILE MANUFACTURING JOURNAL

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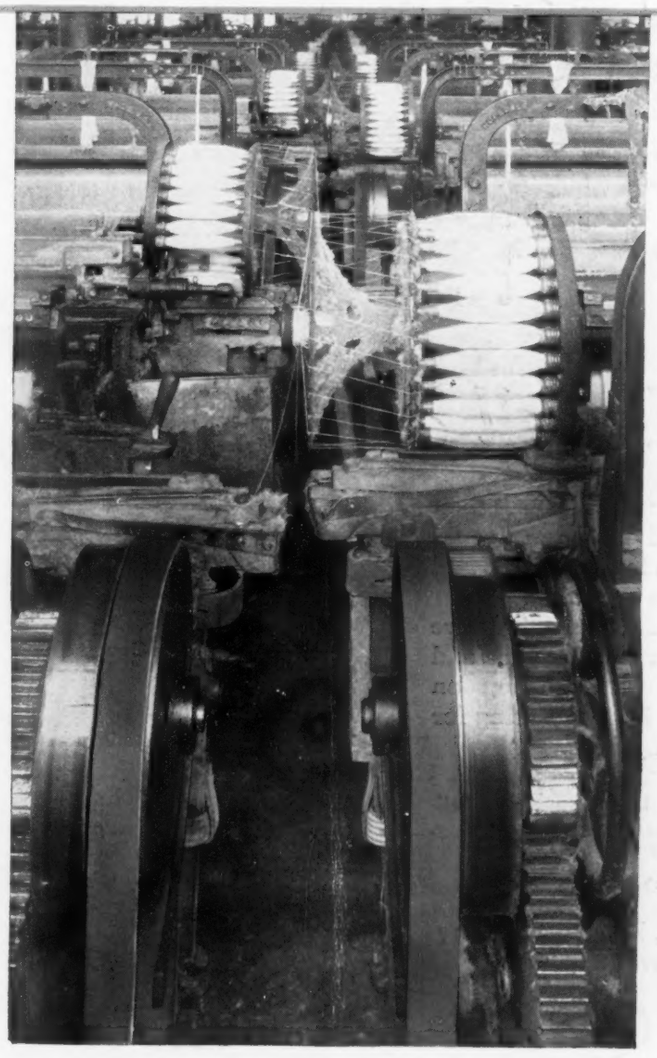

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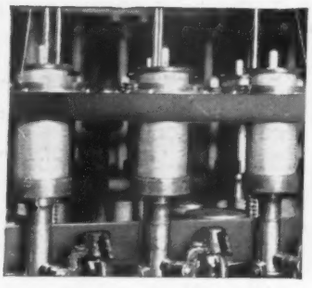

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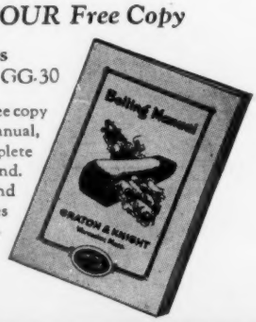

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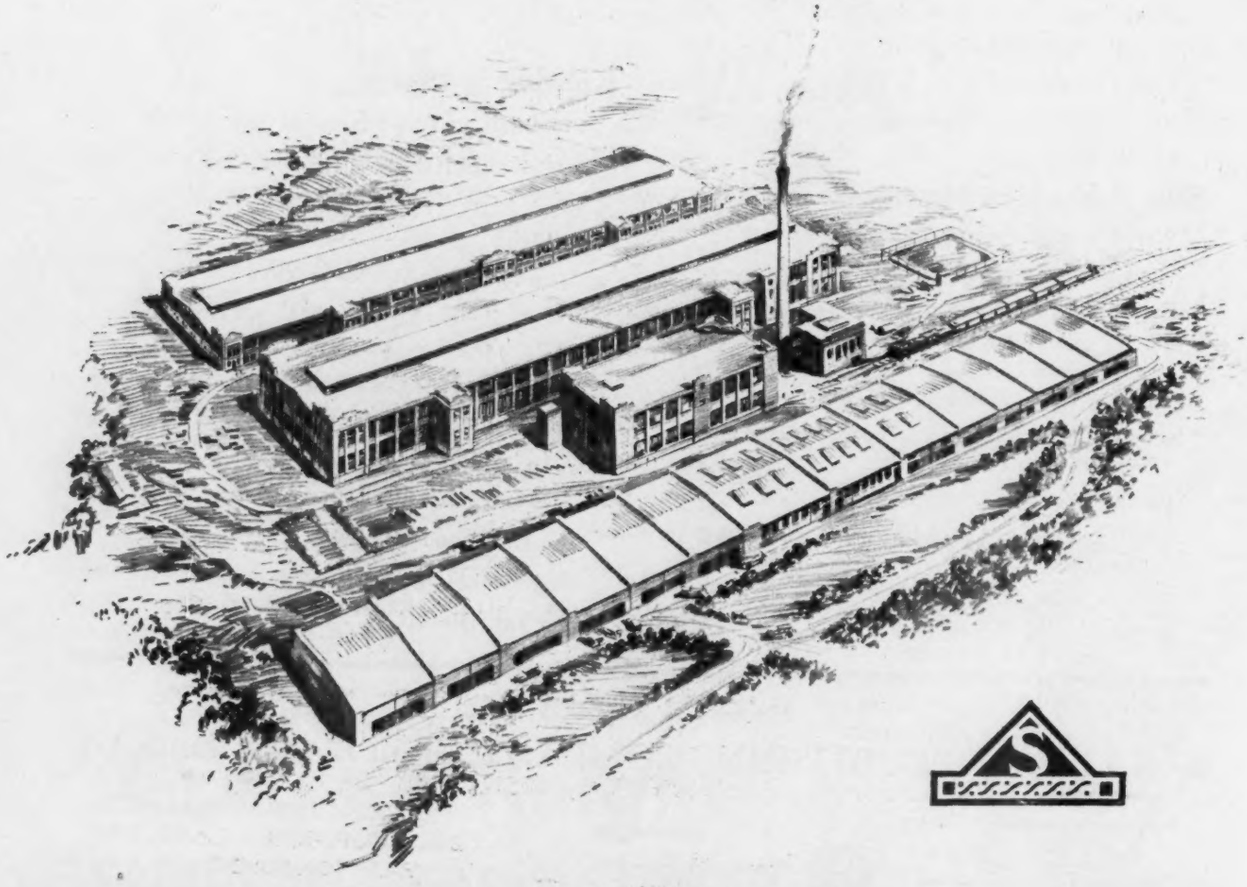


ENGINEERING CONSULTANTS ON THE SOUTH

COTTON

Vol. 94 February, 1930 No. 4

Some Observations on Single-Process Picking

THE RECENT INTRODUCTION of single-process picking marks the major improvement of any consequence in picking room machinery in over fifty years, and is causing a considerable amount of curiosity and inquiry as to its value and adaptability to different mill conditions. It is the purpose of this sketch to cover some of the basic principles that gave rise to this new type of picking equipment, and to discuss briefly the claims for and against the single process under varying conditions.

THE AUTHOR of this article has had an excellent opportunity to observe single-process picking of different types in operation. He has given here an interesting review of the trends in picker room practice, from the very beginning, pointing out those things which demanded one-process picking and those which have made it possible. Following this outline, he makes some personal observations based upon study and experience with this latest general development in the preparation of the stock for spinning.—EDITOR COTTON.

As some of the old-timers can remember, the first pickers, or scutchers, were very crude machines, and had no eveners; the cotton being placed on the feed-aprons by hand. These aprons had a painted slat at intervals of one yard, this slat usually being either black or red, so as to be quite noticeable. The picker attendant was furnished with a pan scale, set for the weight lap it was desired to run on the back of the picker. The proper amount of cotton being weighed out in the pan of the scale, the attendant spread this cotton as evenly as possible over one yard of the apron, as indicated by the marked slats. There were usually two back-tenders, one on each side of the apron to do the spreading, as one found it difficult to reach all the way across the frame.

Since these pickers were used to make laps for the old style, wooden top flat cards, the picker laps did not have to be very uniform. These cards had a very small production, and their sliver was fed from a number of the cards directly through a railway-head evener. Since the railway-head determined the weight of the resultant drawing sliver, it made very little difference whether the sliver from each card was even or not.

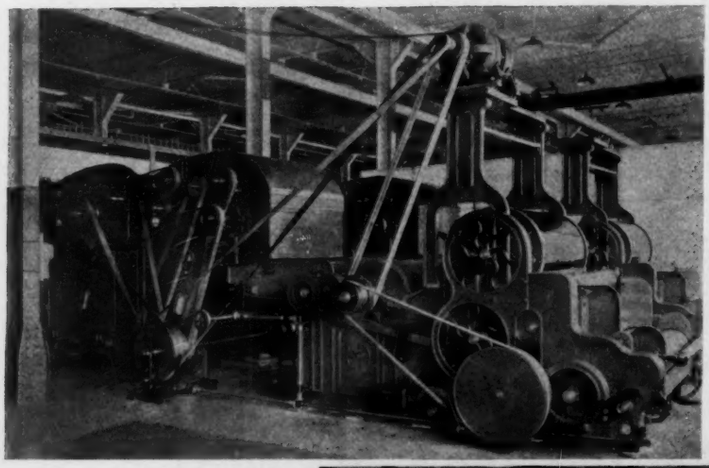
The introduction of the revolving top flat card completely changed this situation. The railway-head disappeared, and with few exceptions, evener drawing was abandoned, and there was no evening possible after carding, except through the number of doublings on the different machines. This being the case, the uniformity of card sliver became a very vital matter, and an improvement in the pickers was in order. The invention of the mechanical evener was the first real improvement in picking since the picker was first invented.

Remember, however, that in those days there was practically no opening machinery, as we speak of it. The picker room was a complete unit in itself, the cotton being fed directly into the breaker picker from the bale. This breaker picker was generally equipped with either a Buckley cylinder, or a three-wing blade beater, followed by a two-wing blade beater in the lapper section. Naturally, a breaker lap made under such conditions was anything but even, and any blending of the cotton was almost impossible. Consequently, the practice of having intermediate pickers between the breaker and finisher machines became almost universal. The doubling of four laps on the intermediate served the two-fold purpose of blending, and also evening, but the mechanical evener was still necessary to obtain anything like an even lap off the front of the picker.

The finisher picker added more doublings, so that the finished lap was fairly well blended, and reasonably even. The carding beater was a later addition to finisher pickers, and as nearly all mills used better than Middling cotton, according to present grades, there were very few motes or neps for these beaters to tear up, and since they made a nice looking lap, and opened the stock very thoroughly, they became quite popular.

This picker room arrangement just described, remained a standard for most mills up until the use of lower grades of cotton became general. The better grades, containing very little leaf, sand, or motes, the pickers had very little cleaning to do; the chief problem being to get the stock well opened and lapped for the cards. Repeated beatings and doublings gave the required amount of opening and blending. Fine-goods mills, using staple cotton, which could not be subjected to the excessive beating that short stock would stand, usually tore up the bales by hand, and tossed this torn-up cotton into a bin to age. A great deal of blending resulted from this method.

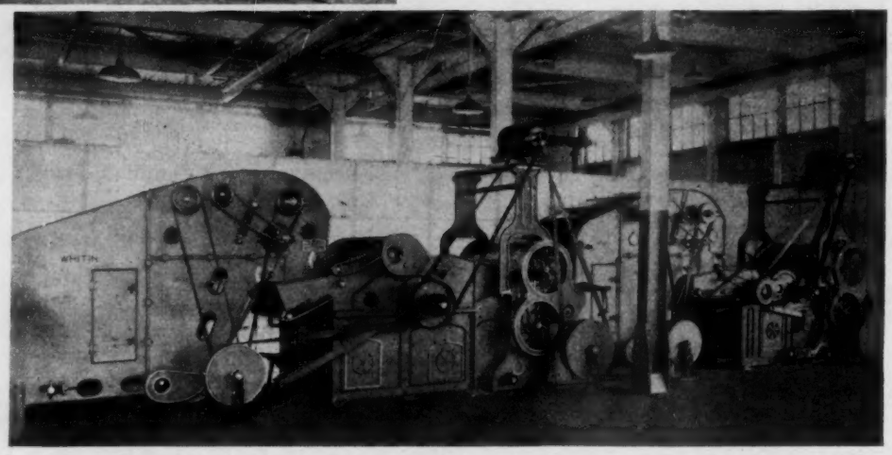
Within the past fifteen years there has been a tre-



"The type of single process picker depends on the requirements of the individual mill and the amount of opening and cleaning machinery preceding the pickers." At the left is a single-process picker at a mill which, with proper opening, cleaning and blending, considered that a lapper was the main thing needed in the picker room. This machine consists simply of one beater with evener; and a tandem feeder, the principle of which is that the first hopper takes care of the fluctuation in the level of cotton necessary to operate the automatic distributor, with a sensitive feed regulator in the second hopper. In addition there is a reserve box feeder to give a uniform amount of cotton bearing on the apron delivering to the feed roll.

The arrangement below shows a single-process picker at another mill, consisting of a single reserve box feeder, 24-inch downstroke Buckley, intermediate reserve box feeder, and 18-inch beater section. Other combinations would be: One Buckley cylinder; two 18-inch sections; two Buckley cylinders, one 18-inch section, etc., etc.

Photos courtesy Whitin Machine Works.



mendous change in the grade of cotton available. Mills that formerly used nothing but Strict, and Strict Good Middling, found it necessary to use Strict Low, or Low Middling. Immediately trouble developed in trying to prepare such cotton for carding with the picking machinery available. It was impossible to clean leafy, trashy stock with nothing more than beaters, and all sorts of opening and cleaning equipment was devised to get the lint clean before feeding it to the pickers. After well designed opening and cleaning systems were installed, it was found that the cotton was as well opened and blended when it entered the breaker picker as it had been before when leaving the finisher, and the intermediate picker was found unnecessary, and gradually began to disappear.

Breaker laps were generally found to be evener than intermediate laps had been on the old arrangement, as the feed-apron in the breaker hopper would put through a very uniform sheet of finely opened lint, where before it had carried the cotton into the beater in a rather lumpy state. These lumps being opened up as the cotton passed through the picking process, there was a constant expansion of the volume of cotton from picker to picker. With the new arrangement, the cotton experienced no expansion after reaching the breaker hoppers, and if the stock was kept at a uniform height in these hoppers, a very even breaker lap resulted. With even breaker laps that suffered no further expansion in the finisher, it was easy to make good finisher laps.

Since perfect mixing is now obtained in the opening room, there is no need for the lap doublings on the pickers, and the idea of a continuous picker was the logical outgrowth of these opening and picking developments. Single-process pickers were built as long as eight or ten years ago, but as the idea that doublings were necessary on pickers persisted, it was some time before the single-process machine gained serious attention.

The purpose of this outline of picker room history has been to show that single-process pickers did not spring suddenly from the brain of some inventor, full-fledged and perfected, but were rather the natural and logical results of the changes in opening and cleaning practice. There is nothing essentially radical and dangerous in this idea of using a continuous picker. Once the conditions necessitating the doublings and redoublings on the picker aprons are removed, nothing could be more logical than to eliminate the unnecessary labor, etc., involved in continuing a useless practice.

The interest of mill executives in the single-process picking falls into two classifications. One is that of the man who has ancient machinery that needs replacement with new, regardless of what type the new might be, and the second is the interest of the man who has his picking equipment in excellent condition, and will not normally have to replace it for many years. In the first case, the question is: whether the single-process is better than the old type, and whether it is adaptable to his conditions. In the second case, there are not only these same considerations, but the very vital one of whether it will pay to scrap good machinery to put in better.

In the first instance, the question of adaptability is the main thing. Provided single-process picking is practical for the particular plant, it is the thing to get. But there are many cases where the old type picking might be preferable for the best of reasons. A colored-goods mill, making picker blends of raw-

stock-dyed cotton cannot use a single-process machine, unless a regular finisher picker is also used to get the blending. A small mill, using a number of different mixes of cotton, or several different colors, will often prefer the old style picking, as being more flexible. With the continuous picker, the whole machine must necessarily be shut down for cleaning at each change of stock or color, while with the regular picking, breaker laps may be run as convenient, and stored until needed on the finishers, which offers much more flexibility. A small mill, running staple cotton, will often not feel justified in installing the preparatory opening and mixing equipment necessary for single-process machines, and will stick to the old way to get the doublings on the finisher apron.

The small mill is the one which must give the most thought to the advisability of putting in the continuous process. The big argument in favor of the continuous picker, is after all, the saving in labor, and a small mill employing only one or two hands in a picker room can naturally save no labor with the new type picking, but a large mill can make a considerable reduction in picker room help. There would be very few cases where a big mill would not find it highly profitable to make picker replacements with the new system, and the bigger the picker room, the bigger the savings possible.

The labor savings possible with single-process picking are sometimes really enormous, and will amply justify the cost of the most elaborate opening and blending equipment and the new pickers. While I have no actual payroll figures at hand, I can call to mind several instances which are illustrative of the tremendous savings in labor effected by the continuous pickers. One mill which has 32 pickers at present on the three-process system plans to replace this equipment with single-process, and will cut their picker room force by about eight hands. This saving will pay a very tidy return on the $40,000 required to put in the new equipment. Another mill reduced its picker room force from thirteen to three with an expenditure of approximately $40,000.

There is likewise a small saving in power consumption, as the single-process pickers are more productive per machine than the old style. Also the new pickers have all important points equipped with ball bearings, which require lubrication but once in three months, and there is considerable less oiling and attention required than on the older machines. Since fewer of these single-process pickers are needed as compared with the old style, there is often a considerable saving of floor space which may permit a few cards or other needed equipment to be put in, or will at least give more lap storage space within the picker room.

In changing to the single-process, the question of whether to buy new machines or have the old ones converted into single-process is determined almost entirely by the physical condition of the pickers. If they are old and in bad shape, new machines would undoubtedly be indicated, but mills which have comparatively new pickers in excellent condition would probably find it much cheaper and more satisfactory to have their present equipment converted into continuous picking.

There is little doubt that single-process pickers will make as good laps as any, and most of those using the new machines claim that they will make better laps than the old pickers. There is no reason why they should not, as the evenness of the lap is determined almost entirely by the action of the mechanical evener on the picker, and the single-process machines handle the cotton throughout in a much looser and fluffier condition than the old style pickers, so that the lint is well opened on the finisher screens, and should lap very evenly. One important claim made for the new system is that it does not felt and compress the laps like the old machines.

With the old method, where four laps were doubled on the apron of an intermediate or finisher, the resultant lap was heavy and fairly firmly felted. Each individual lap coming from the breaker was heavily calendered to compress the two halves of the lap as delivered by the screens, and prevent splitting, so that naturally when four of these highly calendered laps were laid one upon the other and passed through feed rolls under heavy pressure, it required very severe beating to open up the highly felted lap, and the beat-

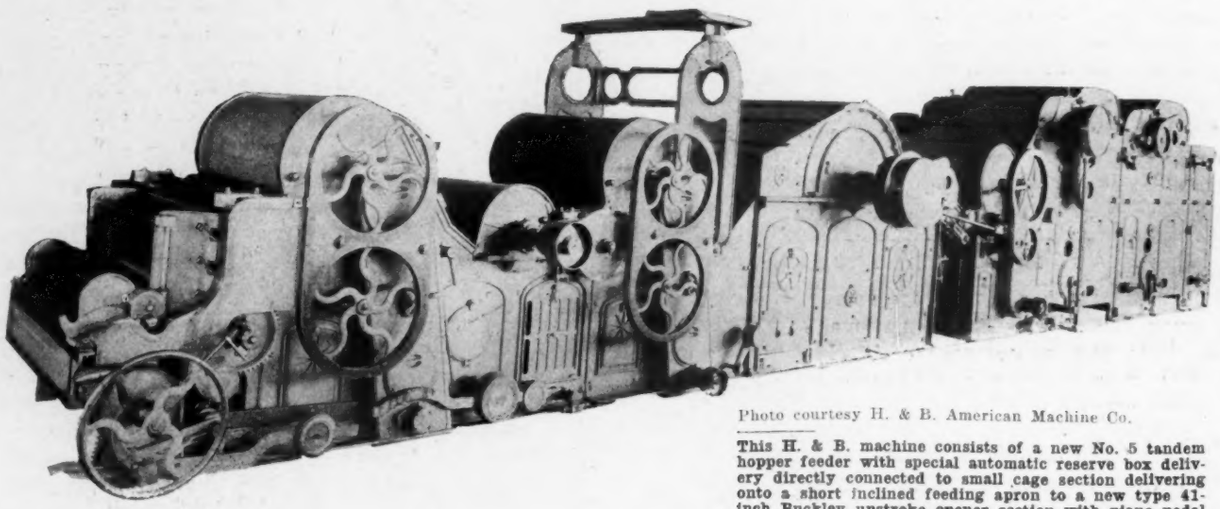


Photo courtesy H. & B. American Machine Co.

This H. & B. machine consists of a new No. 5 tandem hopper feeder with special automatic reserve box delivery directly connected to small cage section delivering onto a short inclined feeding apron to a new type 41-inch Buckley upstroke opener section with piano pedal link regulator. The Buckley section is directly connected to a combination single beater lapper section with double cage section and automatic feed control.

"I WISH to emphasize the fact that the basis of success with single-process picking is in the opening room, rather than the picker room, and satisfactory results cannot be expected unless the requisite amount of opening, cleaning, and blending has been done before the stock reaches the picker room. With first-class opening and cleaning equipment, any of the single-process picking equipments now offered by the various machinery manufacturers should give good results. But it is useless to expect first-class results from this type of picikng machinery unless the cotton has been properly prepared for it in advance."

ers quite often would tear chunks of this cotton out, and make rather rough looking laps. The new single-process machines, by passing a continuous stream of cotton from one end of the apparatus to the other, do not employ this felting action, and at the point where the beating occurs, the lap is not so firmly packed, and a smaller amount of beating will give better cleaning, and the well opened cotton will screen evenly.

There are several general types of single-process picking. One of these has a breaker section followed by a hopper feeder which is followed in turn by the finisher section. The lap from the breaker section passes without calendering into the hopper feeder, which in turn feeds the cotton on to the apron of the finisher section. In another type of single-process machines, the cotton is fed in lap form from the breaker to the finisher section.

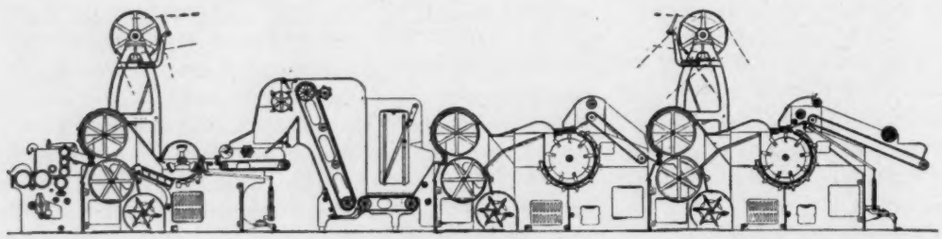
In speaking of breaker and finisher sections, I refer to those parts of the continuous picker which correspond roughly with the breaker and finisher of the ordinary picking; the breaker being the first section into which the cotton is fed from the hopper, and the finisher being that which delivers the finished lap.

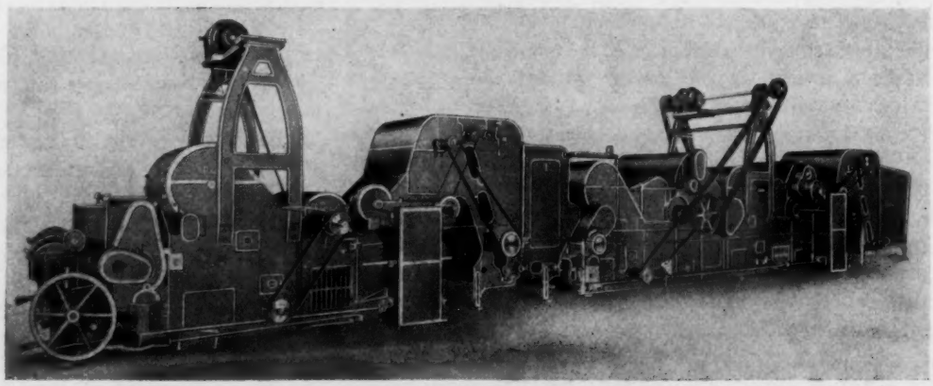
Between the first hopper feeder and the calender section of the finisher, there may be several combinations of equipment.

Some systems employ two beaters, others three or more. The number of beaters is usually determined by the character of cotton run, and the amount of picker cleaning thought to be necessary. The type of beater used may vary widely. One manufacturer uses 40-inch Buckleys, except in the finisher section, where an 18-inch two-blade beater is regularly used, although an 18-inch three-wing Kirschner beater will be furnished if specified. Another manufacturer uses 24 inch Buckleys followed by a blade or Kirschner beater. Another manufacturer uses two 18-inch beaters, which may be any desired combinations of blade, cylinder, or Kirschner beaters.

Since it is beyond the scope of this article to go into an exhaustive description of all the combinations used in the make-up of single-process equipments, I shall simply call attention to a few more outstanding differences in each particular system, and at this point wish to offer a purely personal observation as to the relative advantage of tearing up the breaker lap and feeding it to the finisher section with a hopper, and on the other hand, retaining it in lap form.

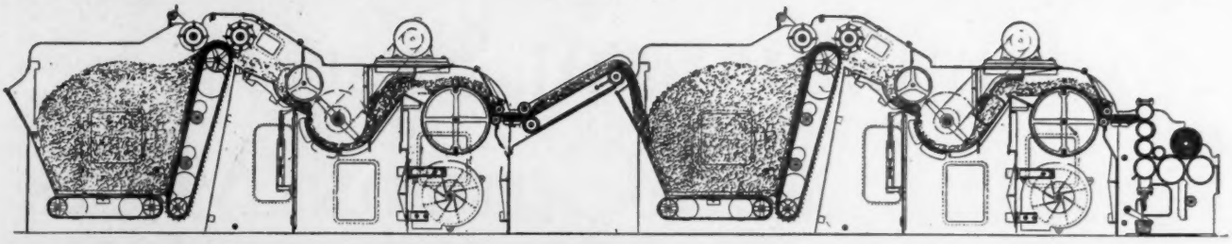
While one of the best systems on the market uses the intermediate hopper, it is my belief that it is better not to tear this lap up, but to keep it in lap form throughout the process. I cannot see any worth while advantage in tearing the breaker lap up, and I think there is a very decided advantage in keeping it in lap form. It seems perfectly obvious that a smoother and more uniform sheet of cotton can be laid on the lap screens of a picker than can be laid on an apron by a hopper feeder, and therefore the retention of the breaker lap in lap form should result in a smoother and more positive operation of the evener on the finisher section. The reason, as I understand it, for interposing a hopper in the process, is to make a heavier lap for feeding to the finisher section than is customarily made on a breaker picker, but I believe that the advantage of having a smoother and more uniform sheet to pass through the evener on the finisher section makes it well worth while to design the breaker section to deliver as heavy a sheet as may be necessary to get the proper blows per inch on the finisher. This

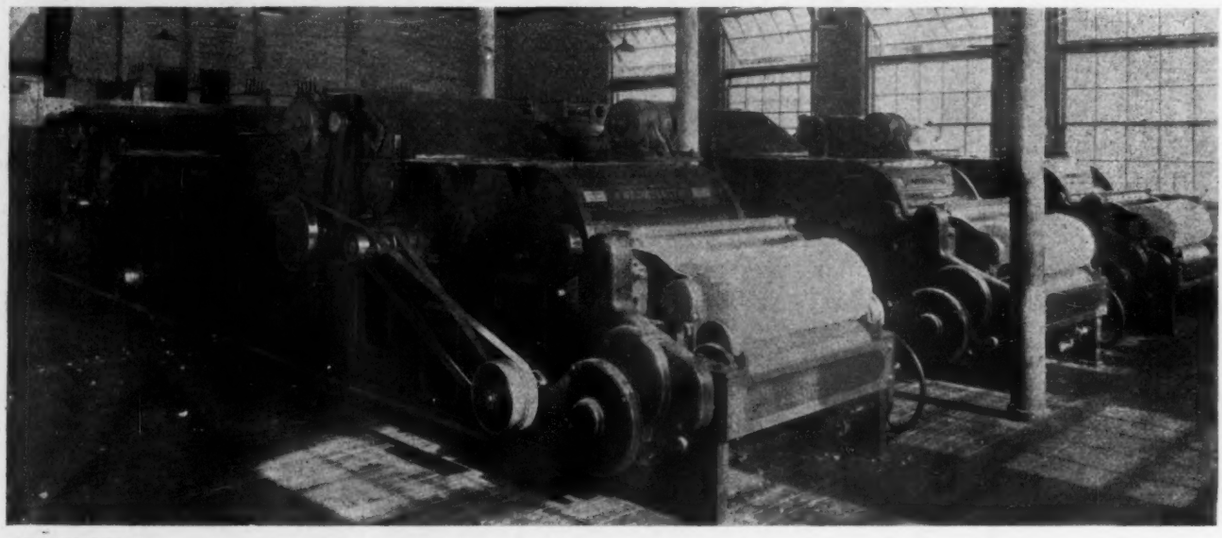




Right, a photograph of the Saco-Lowell single-process picker. Above, a line drawing showing a cross-section view of this equipment.

Photos, courtesy Saco-Lowell Shops.





Photos courtesy Woonsocket Machine & Press Co., Inc.

Above, a cross-section of the Woonsocket duplex picker. Below, photograph of a New England picker room showing three of these operated as single process pickers.

is a purely personal observation, and may be competently disputed by engineers who have developed some of the existing processes.

In commenting on some of the departures from commonly accepted picking practice, I might call attention to the fact that one picker beats the cotton over the noses of the piano bars instead of over a feed roller. It is claimed that better cleaning on short staple cotton is possible with this arrangement, and more responsive and accurate evening is also possible. Another new single-process picking system has several very novel and even radical features, and I consider them excellent. One of these features is a dead air chamber underneath the grid bars. All of the air for screening the lap in this picker is drawn through the beater with the cotton, and is not taken through the grid bars. Anyone who has ever run pickers knows the tremendous loss in cleaning caused by the air draft sucking the light trash, speck, and fly back into the machine after it has been knocked through the top grids, or preventing the beater from knocking this objectionable material out at all. The absence of any air draft through the grid bars prevents a certain amount of this speck and trash to be thrown off by the beater, particularly if a cylinder type of beater is used. Another novel feature of this same machine is the single screen, which prevents split laps. This feature does not appear to be nearly so important as the arrangement of the dead air space under the grid bars, as most new pickers are equipped with ball or roller bearing calender racks, which will almost invariably prevent split laps.

There seems to be a pronounced tendency away from the Kirschner or carding beater on finisher pickers. The carding beater has been a subject of considerable controversy ever since it was first put on the market. Comparatively few fine mills using staple cotton used this beater, but it was almost always used on finisher pickers in mills using short staple cotton. It made a very smooth, even, nice looking lap, and very few coarse mills use anything else on their finishers. The new single-process machines, however, having no heavily felted laps to tear up, are preferred with blade or cylinder type beaters. The carding beater had the undeniable disadvantage of smashing up leaf and brittle trash, and shredding motes up into neps, and a blade or cylinder beater in the new style pickers is better than the carding beater in most cases.

It would require a very long article to discuss this matter of single process picking in much detail, and this discussion has necessarily been rather sketchy; the principal purpose of it being to explain the logical development of the single-process idea, and comment briefly on a few outstanding features of the new system rather than to go into much detail.

In conclusion I wish to emphasize the fact that the basis of success with single-process picking is in the opening room rather than the picker room, and satisfactory results from the continuous picker cannot be expected unless the requisite amount of opening, cleaning, and blending has been done before the stock reaches the picker room. With first class opening and cleaning equipment, any of the single-process picking equipments now offered by the various machinery manufacturers should give good results. But it is useless to expect first class results from this type of picking machinery unless the cotton has been properly prepared for it in advance.

An Employment System *for* Cotton Mills

Necessary Methods and Forms are Explained

THIS ARTICLE describes a method of employing labor for cotton mills, whose essential features have been successfully applied. It is written by a man who is thoroughly conversant with conditions, and who writes with a full knowledge of the circumstances surrounding employment in mills. While the system, complete, may seem a little elaborate, there are ideas in the article for you, regardless of how you handle your particular problem. And it cannot be denied that more systematic, intelligent and scientific methods are needed by many mills.—THE EDITOR.

IN THE PRECEDING ARTICLE under this series (page 6, November, 1929, COTTON), a practical system of employment regulation was given. It unquestionably affords many advantages over the old rule-of-thumb employing, and no doubt would prove more satisfactory for some mills than would the system which will be discussed in this article. The writer, however, is thoroughly convinced that the larger mill organizations should seriously consider a complete employment department.

There are many reasons for such an opinion—most of which have been mentioned in previous articles. Despite the fact that numerous objections to central employment systems for cotton mills have been offered, analyses recognize but one as being competent. A corporation should assuredly consider the economic phase of a central employment system. The pertinent question is, will the benefits to be derived at least offset the financial expenditures? Unfortunately, this is a question all organizations would not be able to answer.

The expenses of an employment office are such that at the end of each year an entry can be made in the books of the corporation showing so many dollars and cents as having been expended, but this is not true of the benefits and savings, for they are to a very large extent intangible. A mill executive who would expect immediate financial profits from an employment sys-

BLANK COTTON MILLS — BLANK, GEORGIA

DEPARTMENT — JOB — DATE — 19

MARRIED — SINGLE — WIDOW — DIVORCED — MALE — FEMALE

IF MARRIED OR HEAD OF FAMILY, NAMES AND AGES OF MEMBERS

LAST EMPLOYED AT — REASON FOR LEAVING

PREVIOUSLY EMPLOYED AT — REASON FOR LEAVING

EMPLOYED HERE BEFORE — WHEN — DEPT. — FOREMAN

REASON FOR LEAVING

RELATIVES IN MILL'S EMPLOY

Nº TOTALLY DEPENDENT FOR SUPPORT — PARTIALLY DEPENDENT

AMOUNT OF SCHOOLING

EXPERIENCE IN WHAT WORK

MEMBER CHURCH — FRATERNAL ORDERS

DESIRE TO AFFILIATE WITH LOCAL ORGANIZATIONS

OUTSTANDING CHARACTERISTICS

REMARKS:

HEIGHT — WEIGHT — WHITE — COLORED

FULL NAME — Nº — DATE OF BIRTH — ADDRESS

The form above is filled out upon application, and during and following the interview. It gives the essential information concerning the applicant.

To the right is shown the reverse side of this form, which carries the employment record, etc., of the employee. This card is kept in the visible file in the employment office.

EMPLOYMENT RECORD

NAME

DEPT.	DATE EMPL'D.	DUTIES	RATE	FOREMAN	DATE LEFT	CAUSE	SHOULD HE BE RE-EMPLOYED	
							UNDER NORMAL CIRCUMSTANCES	IF BADLY IN NEED OF HELP

COMMENTS:

PHYSICAL EXAMINATIONS

EMPLOYEE		EMPLOYEE'S FAMILY	
DATE	FINDINGS	DATE	FINDINGS

Fifth of a Series of Articles on

PUTTING the TEXTILE HOUSE in ORDER

By Michael Welsh

tem would be disappointed after the first year; but if he has the vision of a more modern organization, one equipped and manned to efficiently produce a better class of goods at the lowest possible cost, the problem of scientific employing will be given a broader consideration. The benefits of scientific employing cannot be definitely credited to the department itself, but are eventually reflected in the physical and financial condition of the entire plant and its composite departments. Since the primary purpose of this article is to outline a central employment system, the intangible benefits and savings of such a department cannot be satisfactorily discussed at this time. If, however, there is a desire for such a discussion, an attempt to point out the writer's reasons for believing that a practical employment department is one of the most productive departments of a corporation will be given in a later article.

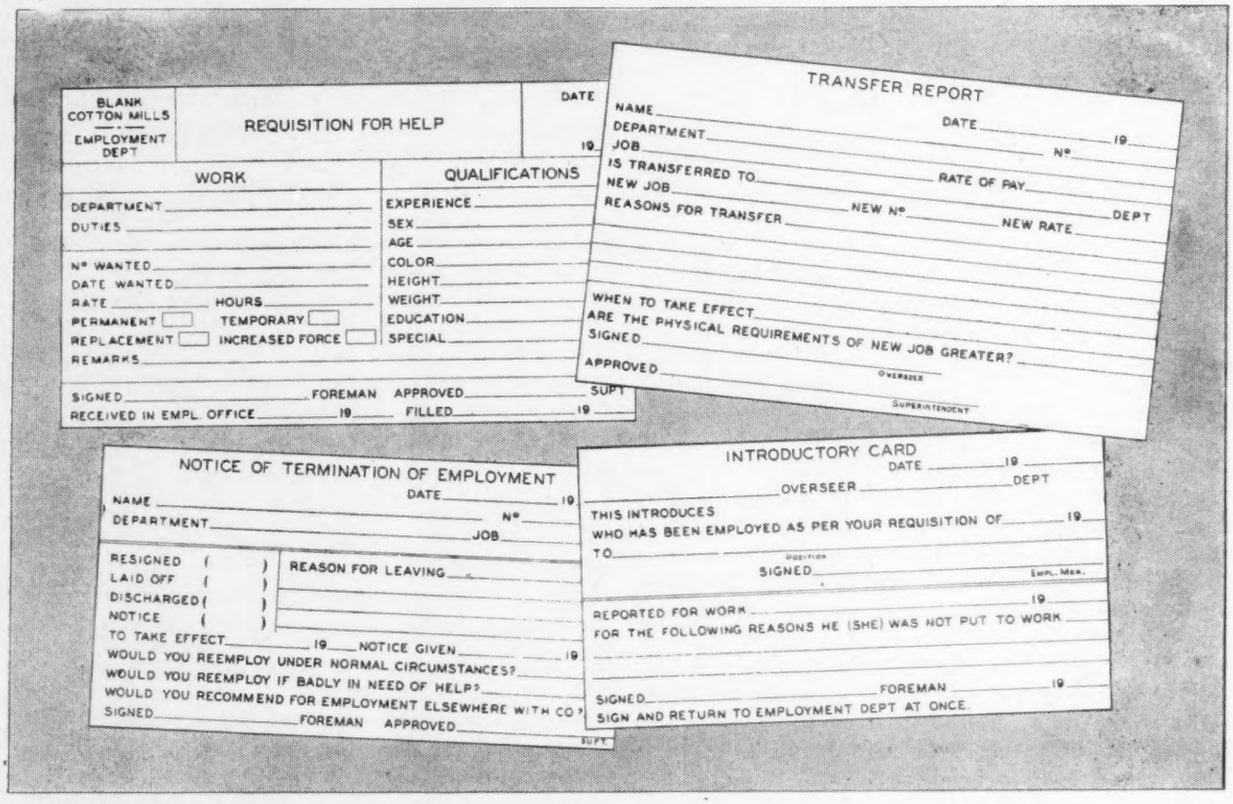
Condensed Outline of an Employment System.

The following is a condensed outline of the type of employment and service department which the writer considers most practical for southern cotton mills. In the smaller organizations, the duties of individuals and the methods of operation could be so modified as to reduce expenses to the minimum.

The employment office should be located at the most advantageous point for all concerned. All employment transactions, interviews and examinations should be conducted in this office. All employment records should be so filed there as to enable them to be easily obtainable. Visible files are recommended for such records as would have to be referred to frequently. A person, designated as employment manager, should be in charge of this office (in smaller organizations other duties could be assigned to him.) He, with such assistance as would be actually necessary, should be responsible for the employing, keeping of employee records and other duties imposed upon his department.

Cooperation Between Superintendent and Department is Vital Point.

The contacts between the employment office and the mill or mills should invariably be between the superintendent or general manager, and the employ-



Top left, Requisition for Help, made out by overseer and approved by superintendent; top right, Transfer Report, filled out by overseer, approved by superintendent; bottom left, Termination of Employment report, made out by overseer, approved by superintendent, filed in employment office; bottom right, Introductory Card, top section filled out by employment office and sent by new employee to overseer, who completes form and returns to employment office.

ment manager, and only in cases when a new employee is sent to an overseer with an introductory card should a direct transaction between the employment department and the overseer be necessary. All records, requisitions, and comments coming from the overseers should go through the superintendent's office, where either he, or his representative, should examine and okeh them before sending them to the employment office; and all records from the employment office to the mill, with the above exception, should go through the superintendent's office. The successful operation of an employment department is dependent upon a wholehearted co-operation between the superintendent and the department.

THIS writer discussed in our November issue a system somewhat simpler than the one here described. Copies of the previous article, which appeared on page 6 of the November issue, will be furnished to those requesting it for study, until the supply is exhausted.—The Editor.

In handling the employing, certain records and forms are indispensable, others have proven meritorous in perfecting the most progressive and efficient systems, but can be more easily omitted than others. The following are essential:

Forms, Records, and Systems of Handling.

(a) The overseers should indicate their needs for new employees on forms entitled "Requisition for New Workers," and send them to the superintendent, who should either okeh them or modify them according to his wishes and judgment, and forward them to the employment office. It should then be the absolute duty of the employment department to furnish new employees, physically and mentally equipped for the work they are required for.

(b) All applicants for positions should be sent to the employment office. The full names of all applicants, their ages and the names of the members of their families should be secured in the employment office before they are granted an interview. The permanent files are then consulted to see whether or not they have a past record. If an applicant has no past record, his name is entered on a new permanent record card and he is interviewed by the employment manager. If he has a past record, it is extracted from the files and is perused by the employment manager to guide him while interviewing the applicant. If the interview proves satisfactory, the applicant should be examined by a doctor, and if the applicant measures up to the physical qualifications deemed essential for the particular job, a notation should be made on the permanent record card. This card and the examination record should both be filed. The writer is strongly of the opinion that members of the applicant's families should also be given a physical examination, particularly if there is a likelihood that they will live in the mill village, where they are apt to affect the other residents by diseases they might have. Overseers should be made to feel free to send applicants to the employment office, and the office should strive to give such applicants the jobs, *provided they meet all requirements.*

(c) After an applicant has been employed, a "Card of Introduction" should be filled out by the employment manager, introducing him to his overseer, who should have the privilege of accepting or rejecting the party, but in case of rejection, the reason for same should be noted on the card and returned to the employment office. If the applicant is satisfactory, the overseer should return the card to the employment office immediately after the new employee is put to work. If after a short period of time, the card is not returned, the office should make an investigation.

(d) When an employee is discharged, a "Notice of Discharge" form should be filled out by the overseer and sent to the employment office. Reason or reasons for the discharge should be explicitly and fully given by the overseer. Before the discharged employee is given his final pay, he should be sent by the employment office to have his voucher okehed. This would give the employment manager an opportunity to talk to the party and hear his story. The record of the discharge should, of course, be entered on the permanent record card.

(e) Notices of leaving and permanent transfers should be handled in a similar manner to notices of discharges. All important items relative to the quitting or transferring should be noted on the permanent record, and the party leaving should by all means be interviewed before he receives his final pay.

(f) All employees, who have proven satisfactory during their employment, should be given a recommendation. This would not only prove helpful to them, but would cause them to leave with a friendly feeling toward the organization.

Complete History on Permanent Record Cards.

All the forms used should be carefully planned so as to give the employment office all of the important facts of each case, and a complete employment history should be carried on the permanent records. These records should be filed alphabetically in two different sets of files, the current employees in live files and past employees in dead files.

Turn-Over Reports.

From the records kept in the employment office, the manager should prepare periodic department and plant turn-over reports and submit them to the proper authorities; and analyses of quits and discharges should also be periodically prepared and forwarded to the superintendent and the key executive.

Control Over Village Houses.

In order for an employment system to function successfully, it would be necessary for the employment department to have either direct or indirect control over the letting of houses, their inspection, care, etc. A direct contact between the employment department and the welfare and other social service agencies in the mill community, etc., is helpful.

There are certain other records which would add to the effectiveness of the department, but the writer would not recommend their adoption until after an employment system had been functioning for some time. "Individual Employee Reports" in regard to workmen's skill, attitude, absences from work, and reasons, are some of the characteristics of employees which could be advantageously kept. Such records are being kept in some few plants and are considered valuable.

The Employment Manager.

The satisfactory functioning of an employment department is largely dependent upon the employment manager and the doctor. The former should be a man who has an intelligent knowledge of the jobs he would be expected to keep filled. He should have a good education and have a well-trained analytical mind. His temperament and experience should be such that he possesses a sympathetic attitude toward and an understanding of the cotton mill employees. It is needless to say that he should be a tactful and resourceful man, one with a keen intuition. An employment manager should, if possible, be a local man; but a man properly qualified for the job cannot always be found within an organization. In such cases it would be a mistake to give the position to an incompetent and inexperienced local man. Unusual caution should be exercised in employing an employment manager. Few people from other sections of the country adequately cope with the situation in the South.

After a person is employed the executives of the organization should make it a point to see that he receives the whole-hearted co-operation of the superintendent, overseers and others upon whom he is dependent in running his department. He should be considered as serving in an executive capacity and his importance should by no means be minimized.

Physical Examinations.

The doctor should be more than a practicing physician.. He should have a general knowledge of the physical requirements of jobs and should not allow his examinations to become routine work. He should be thorough and painstaking. His work, if possible, should be confined to physical examinations and other duties related to employing and plant accidents. His personality, reputation and judgment should be carefully considered before he is employed. Periodic examinations of all employees should be arranged; however, in starting a system these examinations should probably be voluntary on the part of the employees.

The employment department would have to have organization and rate sheets of each department in the mill, and should be informed as early as possible, of all anticipated changes, etc. Service awards, safety work, employee insurance and other such items would be properly placed under the jurisdiction of the employment department.

On every side talk of the changing times is heard. The southern textile industry is changing. The boy has grown to be a man, and as a man he is confronted with most intricate problems. His vital organs must be kept vigorous and healthy. Chic Sale says that "this is the day of the *specialist;*" the man who finds out what we want and need and gives it to us. It is paramount that the textile industry put his advice to practical use in employing labor.

Argentina Good Market for U. S. Textiles.

Argentina ranked fifth as a world market for United States textile products other than raw cotton in both 1927 and 1928, according to a report from Assistant Trade Commissioner Thomas C. Ballaugh, Buenos Aires, to the Department of Commerce. Shipments during 1928 were valued at $15,779,000, a slight increase over the $15,368,000 worth exported to that country in 1927.

Argentina continues to hold its lead among South American countries, its purchases of textiles from the United States being almost double those of Colombia, its closest South American rival in 1928. Exports to South American countries in 1928 aggregated $42,799,000, of which Argentina's share was 37 per cent.

United States shipments of cotton yarns to Argentina in 1928 amounted to 12,908,824 pounds, valued at $6,655,442, of which carded yarn accounted for 8,387,911 pounds, and combed, mercerized yarn, 3,899,166 pounds worth $3,143,818, and combed unmercerized, 621,747 pounds, valued at $376,082. Approximately 70 per cent of Argentina's requirements of imported yarns is supplied by the United States. A large portion of the yarn imported into Argentina from the United States is used by knitting and duck weaving mills. This business is done almost entirely by cable with daily quotations.

The combined totals of cotton yarn and cotton manufactures represented 76 per cent of the total American textile shipments to Argentina in 1928.

A Discussion of ENGLISH COTTON

By William King

THE PART of the English cotton industry known as the American section has been suffering from the effects of bad trade for several years, and it is only during the last two years that the leaders of the industry have realized that it is not a periodical slump that is affecting them, but rather a combination of economic factors, and these cannot be lightly regarded, as they are having an influence on the industry which is likely to reduce its trade to a less degree than at present. The object of this article is to examine several economic factors which bear directly on the present state of the industry.

Finance.

The financing of English cotton mills has always seemed a little curious to those people not intimately connected with the industry. A mill having 100,000 cotton spinning spindles may be taken as an example. Prior to 1919, the issued capital of a mill having this number of spindles would be about $600,000, but only half of this would be subscribed when the shares were issued. About $150,000 or more would be obtained by what is known as the "Loan money" system. The method of obtaining this money would be to invite the general public to lend money to the mill at an interest rate of 5 per cent, this interest being paid quarterly, the money thus lent being withdrawable at call, according to the terms of investment drawn up by the company. An additional $150,000 would be borrowed from some financiers or a bank, the person lending the money having full security by obtaining a first mortgage on the mill, machinery, and property. Thus the capital of the concern would be made up to, or exceed, $600,000.

DON'T PASS this because it may seem "foreign". You really should be concerned with Lancashire, for several reasons. And here is an easily read description of conditions over there today. It will give you the reasons for Lancashire's present plight—in many ways the same conditions exist over here. Mr. King's description of financing methods in England will interest the American manufacturer; and many of the marketing problems he discusses are applicable in this country as well as in England.—THE EDITOR.

This system of financing English cotton spinning mills proved in practice to have a great many advantages, the main one being that for an interval, most likely an extended interval, the shareholders would be obliged to pay only 50 per cent of the issued capital. If good or normal trading was experienced the company would pay bonuses to the shareholders, these bonuses being added to the subscribed capital, thus increasing the amount of share capital called up according to the extent of the addition. The interest on the "Loan money" would remain the same, 5 per cent, so that it was beneficial to borrow money at 5 per cent when profits equal to 15 per cent or 20 per cent were being made.

Naturally, bad trading conditions had a decidedly ill effect on mills financed in this manner, because interest on borrowed money had to be paid, and if trade continued to be unremunerative, the alternative was to call part of the remaining uncalled share capital.

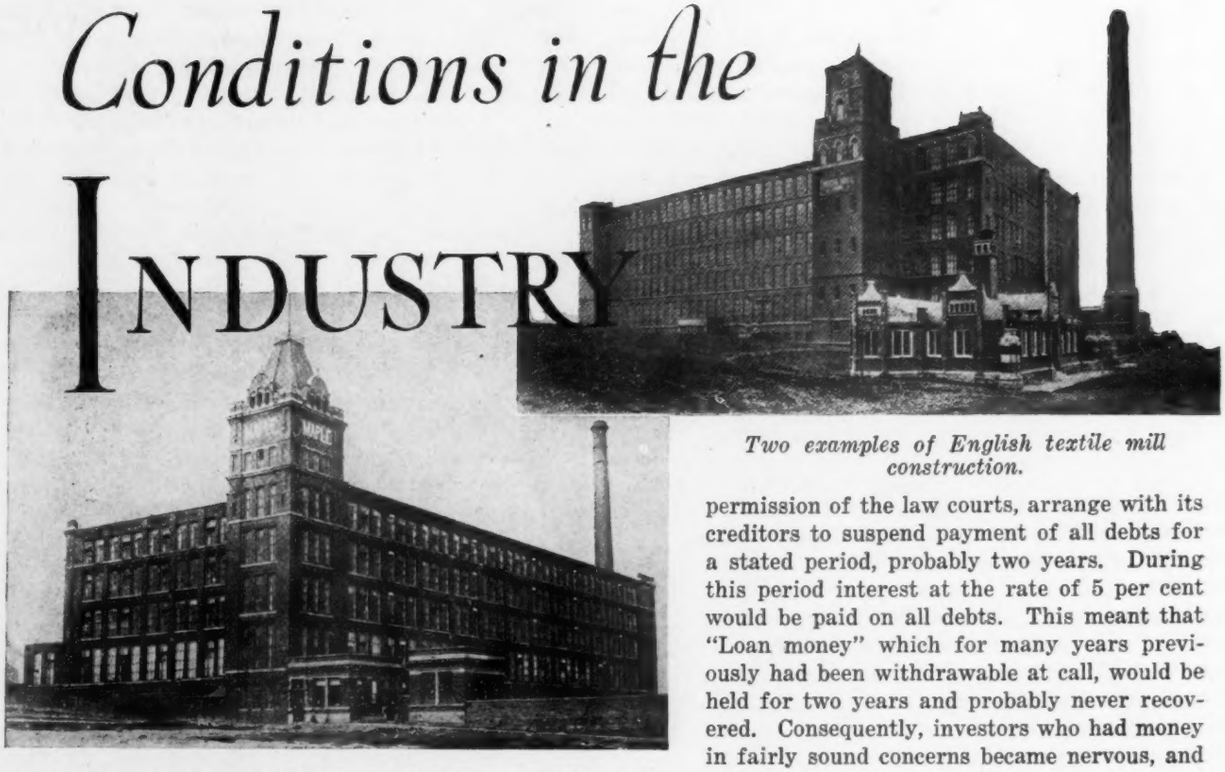
In 1920, and the latter part of 1919, the English cotton trade was brisk; a war ravaged world was beginning to trade in a normal way and the demand for cotton goods exceeded the supply. Yarn and cloth prices increased to a tremendous height, and consequently mill values appreciated, and at this time many influential men in the industry considered the time was ripe for the recapitalization of mills, or in other words, selling out while prices were high.

At this time it was the general practice to re-float a mill and double the share capital. Reserve fund, depreciation money, and the cash obtained for the old mill went to the original shareholders. A recapitalized mill commenced operations with a grossly inflated capital, and no liquid assets with which to run the concern, except money which must be borrowed in addition to that already borrowed to assist in buying the mill.

In 1923 trade took a definite turn for the worse, and many mills ceased to pay dividends. A mill that is losing money and has no reserve fund on which to draw can only exist in this state for a certain time. Either it must borrow money, or go into liquidation.

Those mills that had not called up the whole of their issued capital, were forced to do so, beginning with small installments so that the shareholders

Conditions in the INDUSTRY



Two examples of English textile mill construction.

would not experience difficulty in paying. Those mills whose shares were fully paid, either went into debt or borrowed money at a high rate of interest. The weaker mills, being badly in need of ready money with which to meet pressing bills, at this time began price cutting to obtain cash, and the strong mills had to compete with these and were forced to accept a smaller margin of profit, consequently, the whole market was weakened. In 1926 price cutting had become so serious that very few mills were operating at a profitable level, and during this year several mills weighed down by huge adverse balances and large bank overdrafts, sank into liquidation.

These liquidations, and the general calling up of available share capital, caused many investors of "Loan money" to lose confidence in the mills and withdraw their capital, thus the mills were handicapped still further. During this year the Cotton Yarn Association was formed, its main object being to stop price cutting. The Association planned to achieve this by controlling production, and setting definite weekly prices which its members would be compelled to adhere to when disposing of their products. This body did valuable work in collecting relevant statistics relating to production, demand, etc., but its main object was not achieved and it went into liquidation some few months ago. The weaker mills would not become members of this movement, and continued to sell at less than cost price, thus nullifying the strenuous efforts of the Association.

In 1927 many mills were in a weak financial state caused by the further withdrawing of "Loan money", and to obtain a respite "Schemes of Arrangement" were initiated. Under a scheme of this nature a mill in a weak financial condition would, with the permission of the law courts, arrange with its creditors to suspend payment of all debts for a stated period, probably two years. During this period interest at the rate of 5 per cent would be paid on all debts. This meant that "Loan money" which for many years previously had been withdrawable at call, would be held for two years and probably never recovered. Consequently, investors who had money in fairly sound concerns became nervous, and began withdrawing money, and other mills were forced to adopt this method of retaining money and staving off debtors. During the past ten years the paid up capital of cotton mills with 34 million spindles has depreciated by 250 million dollars. Add to this 12½ millions for calls on share capital made in 1928. All this money has been lost.

At the present time over sixty mills are closed indefinitely, and the prospects for them reopening are very remote indeed. A concern known as the Lancashire Cotton Corporation has recently taken over a great many of the weaker mills, and plans to reorganize them both financially and otherwise. The Corporation intends to concentrate on the production of standard yarns and cloths, and to have centralized selling and buying agencies. Rumor in Lancashire persists in saying that the Corporation is supported by banks who are interested in the mills.

Foreign Competition.

Although I am writing under the heading of foreign competition it is not strictly true that this is one of the factors responsible for the present depression in the American Section of the English cotton industry. Rather is it true that other countries that formerly obtained their cotton goods from England have now built up within their own borders strong and efficient textile units, and are capable of providing for their own domestic needs, and in some cases are exporting to other countries. It is interesting to note the increase in spindleage in Japan up to the year 1926 when England was in a position to appreciate the strength of other countries who were producing cotton yarn and cloth.

Spindles	1900	1910	1920	1926
In Japan	1,333,000	1,948,000	3,690,000	5,292,000

Arno S. Pearse, general secretary of the Internat-

ional Federation of Master Cotton Spinners' and Manufacturers' Association, in his report on his recent investigation of the organization of the cotton industry in Japan and China, says: "The profits made during the war have enabled them to build up such huge reserves that the average reserves of all the mills belonging to the Japan Cotton Spinners' Association, is 60 per cent of the paid up capital, and that of the large combines substantially over 100 per cent of this paid up capital. With these huge war profits, which have amounted, according to the official showing of the Association, to anything from five to seven million pounds sterling, (twenty to thirty million dollars) for each combine, they have extended their mills in Japan, given bonus shares, they have added to the reserves, and finally decided to build with this superabundance of money mills in China which today represent more than one third the total spindles in China."

He goes on to say that the labor costs for spinning are one cent per pound cheaper than those of the cheapest countries in Europe, 20s taken as a basis. In weaving, the average number of looms looked after by one operative is 5.5, and the wage paid for this is equal to 85 cents per day, and the production per loom is higher than in England for similar cloths. The abolition of night work in Japan which took place in July, 1928, has not decreased production. The number of hours per day, and the number of rest days per month have been rearranged, the mills now working two shifts of 8½ hours, with two rest days per month. This rearrangement will mean a slight increase in production.

Three significant factors appear from this report.

(1) The Japanese mills possess a vast amount of liquid capital.

(2) The wages paid are considerably less than those paid in the cheapest cotton spinning countries in Europe.

(3) The two shift system is in operation and the number of legal rest days per month is two.

The spindleage of China has increased as follows:

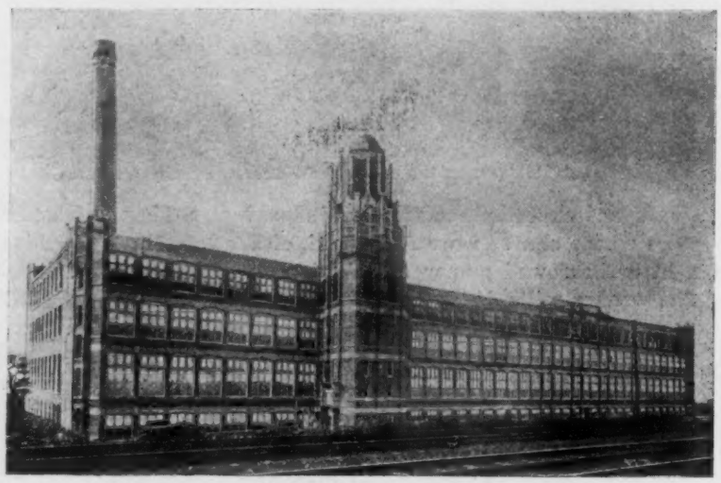
Spindles	1896	1915	1925
In China	417,000	1,008,986	3,414,062

Referring to China, Mr. Pearse says, "In China the cost of spinning is slightly lower than in Japan, owing to cheaper labor, but the cost of weaving is not lower than in Japan, rather higher, because the operatives are not yet able to look after as many looms as they do in Japan, and any advantage in wage is probably counterbalanced by the larger number of hands. *China now has tariff autonomy*, and we are sure to see increased duties on cotton goods in the near future, which will place the mills established there in a still further advantageous position."

In 1913-14, 97.1 per cent of the total amount of cotton piece goods imported into India were made in England, but in 1926 India imported only 82.3 per cent of her total import of cotton piece goods from England. Japan has been steadily gaining ground in this market. In addition India's productive power has gradually increased since 1914. This country also has erected tariff barriers, and there is a possibility that at any time these may be raised still higher.

Brazil, Canada, Czecho-Slovakia, Italy, all these countries possess very efficient textile units, whereas twenty years ago they were dependent on England for cotton goods. A study of the revelant statistics relating to the cotton activities of these countries will clearly demonstrate why they no longer buy the amount of cotton goods from England that they were in the habit of buying several years ago.

The Textile Weekly, Manchester, England, in the issue of June 28th, this year has an editorial on "Lancashire's Real Problems." After referring to mass production as a possible remedy for bad trade,



Another Typical English Mill.

it goes on to say, "It may, of course, be said there is not sufficient trade for this policy, but foreign countries, which a few years ago had no established trade worth considering, have been able by their methods to beat us in the world's markets."

Indubitably linked with this matter of foreign competition are the activities of the English textile machine makers during the past twenty years. It may be said with truth that in this matter of foreign competition, England has been wounded by a sword, the steel of which she has forged herself. Platt Brothers & Co., Ltd., Oldham, Lancashire, employ 12,000 workers, and have factories covering 65 acres of ground. A big proportion of these men are employed on work abroad. Lately, however, some departments of this concern have been working short time owing to the general trade depression in the English textile industry.

Another concern, Lord Bros., of Todmorden, a subsidiary of Brooks & Doxey, Manchester, Lancashire, has been partially closed owing to lack of orders, and many men are consequently unemployed.

The Textile trade union movement in Lancashire, England, is very old indeed. More than a hundred

years ago combinations of cotton workers existed in the form of small societies, and discussion took place as to work, wages, and conditions. From the worker's point of view, the present standard of trade unionism has only been attained after a century of struggle and sacrifice on the part of past members and their leaders.

Trade Unions.

At present these trade unions are exceptionally well organized, and exist for the purposes of resisting wage reductions, obtaining for their members better wages when trade conditions permit, and represent the workers in any negotiations with the employers. Trade unions contribute to the expenses of certain candidates nominated for Parliament, and these men if elected, uphold the interests of the trade unions in the House of Commons, in matters pertaining to the textile industry. Thus it will be seen that these bodies have political as well as industrial power. Any suggested alteration which is likely to affect the status of the worker is keenly examined, and if likely to affect him in an adverse manner is usually keenly contested.

Consider the position of an industry which is in sore need of mechanical readjustment, and the reorganization of labor. To bring about these reforms sweeping alterations must be made in the apportionment of labor, and methods that have become permanent because of custom must be abolished. The following extract from a letter to the correspondence page of an English textile publication is interesting:

"Any mill containing a hundred carding engines could save $1,500 to $2,000 per year by installing vacuum stripping and cutting down the number of strippers and grinders at present employed. What will be the trade unions' attitude on a point of this kind? If they disagree with it, it means that they consider that it has taken under certain conditions eight men to look after a certain number of carding engines, and no matter what conditions prevail that would minimize the work; it must always have eight men to do it at the same rate of wages. The trade union leaders are the trustees of the trade union funds; are they simply content to pay out these funds as long as they will last? The welfare of the members of the trade union is bound up with that of the trade, and the time is surely coming when they will have to decide whether they will assist by practical demonstration or not."

Another correspondent says—these letters appeared in June of this year—"By reason of trade union regulations, usages, etc., it is almost impossible to restaff a cotton mill on new lines or establish or install further labor saving machines."

The writer was talking to an English cotton manufacturer some weeks ago, and suggested to him a change of system in his weave room. He said he would have to consult the workpeoples representatives before the change could be made, and because of past interviews he was tired of bothering with them, and so, the old system continues.

The system of paying unemployment benefit in England goes back to the year 1910 when it was in operation in one or two trades. The system became general in 1918 and has continued up to the present time. The opinion exists in some quarters that this money is given by the state to unemployed people, thus making them a definite burden on the state. This is not so. At the present time the State Ministry of Labor is responsible for the administration of the Unemployment Benefit system. All workers, both men and women, are compelled by the state law to contribute a certain sum of money per week of work, and all employers of labor are compelled to contribute a certain sum weekly for each worker employed. The rates are as follows:

RATES OF WEEKLY CONTRIBUTIONS.

	By Employer	By Worker	Total
Boy (age 16 but under 18)	8 cents	7 cents	15 cents
Young Man (age 18 but under 21)	14 cents	12 cents	26 cents
Man (age 21 but under 65)	16 cents	14 cents	30 cents
Man (age 65 or over)	16 cents	nil	16 cents

It will be seen from this table that a considerable sum is paid weekly by employers and employed, and all this money goes to the state, and into a fund from which is paid unemployment benefit. The money paid by employers increases operating costs.

A man aged 21 but under 65 who is unemployed, and is unmarried, receives from the state if he is eligible, that is if he has paid several consecutive contributions, the approximate sum of $4.32 per week. A married man receives an extra sum for his wife in addition to the above, and an allowance for each child. The "dole system" may be a political necessity—that is outside the scope of the article—but it is practically self-supporting from a financial point of view.

The disadvantage of the "dole system" as it applies to the branch of the English cotton industry under discussion is, that an unskilled laborer who is married and has two children, can obtain more money from the "dole" than he can by doing a week's work. Also, a skilled weaver, or mule spinner, or cardroom hand, who is out of work, will receive unemployment pay from the trade union, and "dole" as well, and very often these exceed the amount of wage that is obtained by a week's work.

The writer has talked with men who work as "extra piecers" in a large mule spinning mill, and the married men said quite frankly that they receive more money when they are not working, than they do when they are working the usual 48 hours per week.

There is no doubt that the textile worker in England is amply protected against bad trade. The result of this protection is, that there is among the workers generally, an attitude of lassitude and indifference. I suppose some of it is due to the bad trade which has existed over several years.

All these factors then, of which I have written, are directly responsible for the present state of the American Section of the English cotton industry. Unless the mills in this section undergo financial reorganization, and efficient modern machinery is installed, and radical improvements made in the apportionment of labor, I do not see the remotest possibility of the sixty mills that are now closed, ever reopening again. Rather I would say, that many others will close.

Group of evening textile classes at White Oak Mills of Proximity Mfg. Company, Greensboro, N. C.

Climbing Upward *in the* Night

By Thos. H. Quigley

IT IS ALWAYS an especial effort of ours to present material prepared by men who, to become vernacular, "know their stuff." Here is a brief report on the progress made by night schools at southern cotton mills (500 of them and 7,500 pupils); together with some general observations on the subject, and some specific suggestions as to classes. It was written by a man whose work and interest give him a thorough background on the subject and a full knowledge of these activities.

EDITOR COTTON.

NO ONE, unfamiliar with the South's vast textile industry, although he may have lived all his life within the sound of its whirring spindles and roaring looms, can quite visualize the progress—the revolution almost—that this industry is bringing about in the economic life of the southern states, on the one hand, and that is happening within the industry itself, on the other.

Of course everyone who reads the southern papers or rides the Piedmont roads has some idea of the southward migration of cotton mills and the tremendous expansion of the mills already here. This expansion and southward migration is creating a demand for the labor of native southerners that never existed before. The tens of thousands of dollars in additional weekly cotton mill payrolls are creating increasing local demand for the products of southern farms and stimulating retail business in a manner in which it has never been stimulated before. The coming of the cotton mills is an especially effective form of farm relief. The employment of a hard-pressed farmer in the mill means not only that the farmers who are left on the farm gain one new cash customer but that at the same time they lose a competitor.

But within the industry itself vast changes are taking place. It is probably true that much of the cloth that ten years ago sold without question as to first quality could not be sold at all today. As a young mill man expressed it, "When I first entered this business we didn't any more dream of the quality that we are making today than we dream today of the quality that our customers will demand, and get, ten years from now." And this young man was not speaking of fancy dress goods, nor of men's shirts, nor of bed sheets, although his remarks would have applied with equal force to them; he was speaking of coarse heavy duck and tire fabric. Every automobile owner who swells with pride at the enormously increased mileage he has gotten out of his tires in recent years should breathe a little thanks to increased care of the operatives in probably some southern cotton mill that made the fabric in the tires.

Into this picture of Dixie's cotton manufacturing industry the State Boards for Vocational Education of the southern cotton manufacturing states including Virginia, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi, Arkansas and Texas are fitting their textile education programs. There is no more far reaching function for public education in this growing industrial section, than this function of assisting to develop the South's industrial personnel to the highest degree of wage-earning and industry-attracting efficiency. The more the necessity for waste elimination, the more the hazards to life and limb must be reduced, the more expensive and delicate the machinery, the more accurately each change must be calculated, the finer each mechanical adjustment must be made, then the more highly and thoroughly must each human being be trained for the task.

During the past year in 123 cotton mill communities the State Boards for Vocational Education co-operated with boards of education in organizing and maintaining 501 textile night classes for approximately 7,500 employees who work by day and go to school at night to improve their efficiency and chances for promotion. Without a single exception, the mill officials co-operated whole-heartedly in bringing these educational opportunities to their employees. According to plans already laid these figures will be considerably increased during this year.

In order to standardize terminology, to increase the general efficiency of the classes, and to offer rec-

ognition for special effort, the State Boards for Vocational Education of the southern cotton manufacturing states, through a Committee on Standard Textile Courses, composed of their official representatives meeting at Greenville, South Carolina, in 1928, adopted the Standard Cotton Textile Evening School Courses of Study, a Standard Cotton Textile Evening School Credit Card and a Standard Cotton Textile Evening School Diploma and certain regulations governing their issuance.

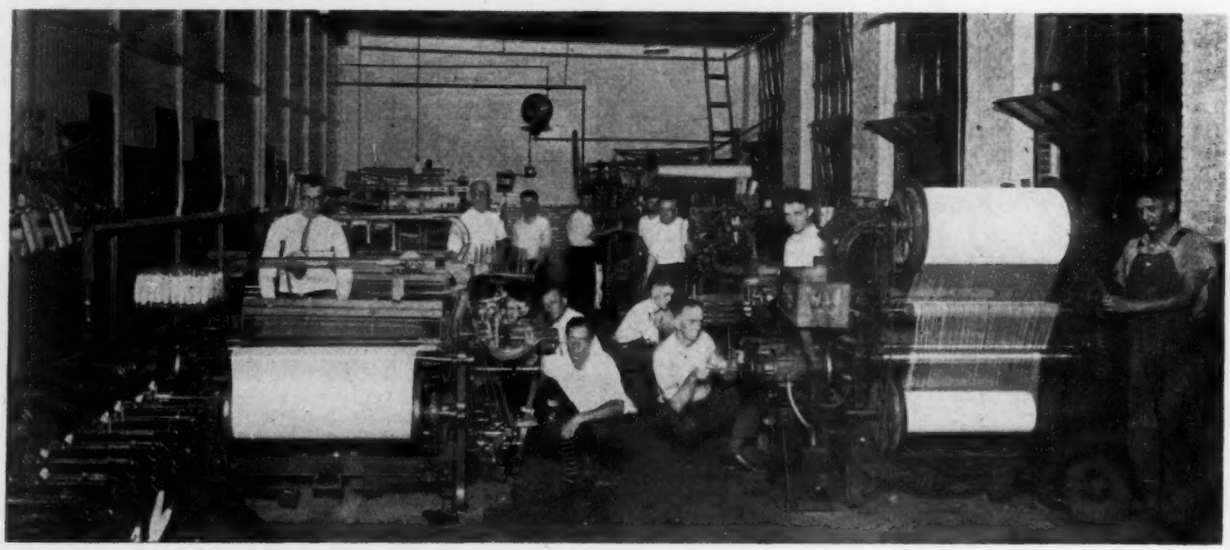
It has been, and is the purpose of the committee to keep the requirements for credit cards and diplomas so specific that these documents will represent definite accomplishments, yet sufficiently flexible to meet all practical conditions in carding, spinning and weaving.

The popular reception accorded by mill executives, employees, evening textile teachers and public educational officials to this effort at desirable standardization led the Committee on Standard Textile Courses at its meeting in 1929, to amplify the regulations adopted in 1928. These amplified regulations, appearing in a new booklet, are based on the accumulated experience of hundreds of practical textile teachers in southern cotton mills, for whose guidance the booklet is intended. Copies of this booklet may be obtained from the State Supervisor of Industrial Education at the capital city of any southern textile manufacturing state. The services of these individuals are always available to the mills for the development of these educational programs.

While it is true that nobody who works in a mill would be denied the privileges of the night school but is encouraged to avail himself of them, it is equally true, as any experienced mill man can testify, every mill, like every other human organization on earth, has its share of men who are enthusiastic starters, but indifferent finishers. On the other hand, every mill has its share of that fine breed who with a little encouragement, can always be depended upon to fight anything through to a victorious end. Of such is America, and of such should night school enrollment be made up. The first type always drop out after a few nights and also tend, because of their superficiality, to drive out the earnest men who really mean to improve themselves in the industry. Therefore one of the first points in the organization of a textile night school is to set up, before it starts, some sort of a selective screen, such as slight money deposit, reviewing of past reliability and a clear understanding of performance expected, by which the motes will fall through and the real fiber be retained in order to turn out a good product.

Almost invariably these classes are taught by men connected with the local mill and of much practical experience in the subjects they are teaching. In the case of these evening textile classes, at least, George Bernard Shaw would have to retract his oft-repeated jibe that "them as can does, them as can't teaches," for the teachers of these classes are usually superintendents, assistant superintendents, overseers and occasionally second-hands. Sometimes the classes are held in a nearby schoolhouse, sometimes in special quarters provided by the mill, sometimes right in the mill itself. There is an almost invariable rule that "the closer to the mill, the better the class."

Oftentimes a superintendent or overseer, when approached to take charge of a class, will hesitatingly reply, "I can do my work; but I am no teacher." If an overseer were not a teacher of men in the truest sense he would not be occupying the position that he does in the cotton mill of today. When the real meaning of education in its truest sense is grasped by employer and employee, the mill becomes a training laboratory with receptive pupils, faculty and equipment that no university on earth can duplicate. It would be a crass individual indeed, who visiting a textile night school and seeing an overseer or superintendent with his men gathered around him, would not feel impelled to take off his hat in the presence of the leaven that leaveneth the whole lump. The world, the industrial world—and especially the educational world—must not forget that the aptest pupil in history was an aging fisherman and the greatest teacher of all times a carpenter.



Vocational Evening Class in Loom Fixing, at Parker School District, Greenville, S. C.

R. A. SONIAMAN talks about

PRUNING the PLANT PAYROLL

and every mill man wants to think along this line

HOLDING LABOR COSTS to a minimum is much a matter of common sense plus a dash of that quality which is so essential to all industry—eternal vigilance. These two—backed by push.

It is the intention in this discussion to show how the matter can be handled in a practical manner. It may be said that the idea is applicable to the larger as well as the small plant, the former often being a more fertile field for a determined executive than the latter, because of the difficulty of following up due to the greater complexity of the larger concerns. For example, in a small mill the capable executive can usually keep a sharp eye on the labor cost personally, especially if he has some plan to go by and follows it up at short periods; whereas, in the larger plant much of the following up has to be entrusted to department heads, with the result that due to differences of opinion, lack of accurate knowledge as to just what constitutes a day's work, plus the inertia arising from a dislike to readjust the duties of some of the workers, the pay roll is apt to become more or less loaded with dead wood.

A paramount element necessary for intelligent consideration of the proposition is that of knowing approximately what the production requirements will be for short periods of time in the near future. Obviously a larger plant will need a greater degree of accuracy in its estimate of future orders than a small concern owing to the larger number of workers involved in the former, and the disruption of the morale of the personnel where there are numerous changes in workers hired and laid off.

Having, let us say, a fair conception of the quantity to be turned out, the next step is to draw up a chart of the machinery required, and of the numbers of workers needed to operate the machinery.

Naturally, it is necessary to know how many machines or units that a worker can handle in order to lay out an efficient low-cost organization; therefore, mills not in possession of such standards of work should take steps to collect the necessary data. Quillers, winders, coners, spinning machines, speeders, twisters, reelers, in fact, the entire gamut of textile machinery is amenable to standardizing for this purpose. Laying out the organization on paper will give the executive an opportunity for analyzing, then synthesizing his corps of workers at the minimum practical figure.

Get Rid of the "Handy-Man."

Before proceeding further it may be well to dispose of that non-descript character known as the handy-man. This individual is a prolific source of payroll inflation, and often a parasite that because of past custom or tradition is difficult to weed out. The duties of all so-called handy men should be put under careful scrutiny, those that are actually necessary being listed in the sequence in which they are to be done. On a par with handy men are fixers, oilers, truckers, spare hands, and so on.

A study of the duties of these workers with a knowledge of the time required to do them will often bring to light that a rearrangement of the duties can be made; some work perhaps could be dispensed with altogether, other duties so laid out that a greater period of time will elapse between recurrences. It is surprising what a number of cases will turn up where the duties performed are out of all logical reason. And the writer would add here that these anomalies occur in mills which apparently are splendidly managed as well as in those where things are somewhat slipshod.

Oftentimes a change in the sequence and the time of the duties will permit a consolidation of two jobs. An increase of a dollar or two will mean practically

DON'T CONFUSE cutting the pay-roll with reducing wages. There's a big difference! Every one of the suggestions made in this article, written by an experienced operating executive, can be carried out without reducing wages. No reference is made in any way that would suggest this.

In fact, there are many mills where the adoption of some of these ideas can result in an increased wage and decreased cost. Maybe yours is one of them. Soniaman condenses the condition into this statement: "Due to differences of opinion, lack of accurate knowledge as to just what constitutes a day's work, plus the inertia arising from a dislike to re-adjust the duties of some of the workers, the pay roll is apt to become more or less loaded with dead-wood."—THE EDITOR.

the savings of one worker's wages here. Investigation soon discloses to a determined executive that the changes are not only logical but are actually necessary to give the mill a fair break, as the saying goes.

Are All Your Sparehands Necessary?

On a par with handy men are sparehands. It is not a good practice to use sparehands to help oue here and there from morning to night. There is too much discrimination among the workers assisted when such a scheme is in vogue. Usually the most inefficient or deliberate slackers are the beneficiaries of this system because the section-hand and second-hand want to keep their sections and rooms in good running shape—and what is easier than to shove a couple of spare hands on the machines of the workers who are "busted?"

Better by far to settle on the policy of each worker being efficient enough to handle his or her work properly without aid. Only in periods of special upsets or crises should a worker be given help. Often what appears to be an adverse running condition can be quickly improved by taking the bull by the horns and reprimanding the worker in no uncertain manner. Of course, an investigation should precede calling down the worker since the trouble may be due to circumstances entirely beyond the control of the operative involved in the matter.

Are all your spare hands necessary?
Do your learners really learn, or are they left to sink or swim alone?
Do any of your workers have to wait for materials?
Are you sure, in fairness to yourself and workers, that everybody in the mill has a full job?

Read the accompanying article, then ask yourself these questions. Soniaman says these conditions may occur in mills which apparently are splendidly managed.

Another point that must be definitely settled upon so as to obviate any possibility of misunderstanding arising from time to time is that of cleaning the machines. In quillers, winders, spoolers, reelers, and other light machines whose parts are easily accessible and where there is no danger of injury to the worker, and where, furthermore, the cleaning requires only a bit of brushing or wiping, taking but a few minutes daily, and perhaps a half hour or so at week ends with the machines stopped—why, the operators of the machines can do the cleaning.

How About the Learners?

How many learners should a department carry? This question requires a dissection of the labor turnover with an eye to immediate future requirements. No specific reply can be given that will cover every case nor even any one case at all times because of the indeterminate character of the labor turnover. The latter, in textile circles today, resembles the vagaries of the sales of newspapers at a public newsstand. One day all sold out, the next with half the stock left over.

But generally, some fair estimate can be made of the turnover at any particular section and arrangements may be made to keep a certain number of learners about the firm. A word here, however. Learners consume a concern's money, and the time of someone to teach them, and of someone to supervise them. It is a larger problem than appears on the surface.

It must be quite evident that to keep labor costs under control that the matter of production requirements will have to be kept in the foreground. When the production fluctuates greatly in short periods of time, it is a difficult proposition to control the costs to a point where one feels reasonably certain that the minimum has been attained.

For example, given a weekly pay roll of $4,000, and a production figure of 40,000 units, a labor cost of 10 cents is reached. Now, let the production drop to 30,000 units and in spite of what one does the cost will be over 10 cents. This is due to the fact that one cannot always dispose of sufficient workers to bring the cost to a par with the larger production because of other factors that enter the case and which are not always to be foreseen until the new situation is at hand.

However, should fluctuations occur with frequency, an average can be struck with reasonable accuracy which will serve as a practical guide. Naturally, a close watch should be kept for sections where a worker may be pared down without sacrifice of quality of product or cleanliness of the room.

In any scheme of labor cost control in which machinery plays a part, it must always be patent that the speed of the machinery is a vital factor. Given a set of conditions and everything else being equal, the highest speed consistent with good work and reasonable wear and tear on the machinery will bring about a minimum of labor cost.

Now Figure the Efficiency.

Having ascertained that speed which apparently is the highest that can be run to best advantage, the percentage of efficiency of production should be determined. Always it should be as near the 100 per cent mark as can reasonably be gotten to. Important in the reaching of peak production week in and week out, is that of stopping of machinery during running hours, whether legitimate or otherwise. Every stoppage should be analyzed and unnecessary stops eliminated and legitimate ones reduced to a minimum. Deliberate stopping of machines by unscrupulous workers should be dealt with in a firm manner, the penalty being that which best meets local conditions.

Another significant element in bringing about major productions and thus reducing labor cost is the matter of keeping the machinery in good repair at all times. Needless, or premature, deterioration, should be rigidly looked into and the necessary steps taken to correct same, but in all cases keep the machines in tip-top shape.

As with the machines, so also with the workers

"IT IS NOT a good practice to use spare hands to help out here and there from morning to night. * * * Better by far to settle on the policy of each worker being efficient enough to handle his or her work properly without aid." Soniaman means for that to apply after you have determined just what a job is. Maybe you can re-arrange the duties of some of your jobs, giving skilled work to skilled workers, unskilled duties to the unskilled, etc.

—they must be efficient. Not only should they be expert at their duties, but they must also be pliable, ready to comply with whatever requests may be made of them relative to their work. In short, discipline must be excellent.

Incompetents—there should be none where selective hiring can be done—incompetents, should be weeded out at the earliest opportunity. An incompetent worker is like a bad spark plug in an auto. The organization may get along all right for a while, but eventually trouble is bound to happen.

See That Learners Really Learn.

Coming back for a moment again to learners. Stress should be placed on the matter of teaching all beginners in a thorough fashion. They are the future foundation of the firm, and consequently, require the most exacting attention so that they will acquire the requisite degree of expertness to handle the work proficiently and understandingly.

Sometimes, however, the splendid training that a firm gives its newcomers acts as a sort of boomerang—the workers are enticed by competitors, who lure them away with one bait or another. In such cases, it often is best to keep a list of *reliable* reserve workers on hand—rather than to have a number of learners about who may be but transients—the reserve workers being those operatives who for some good reason have separated themselves from the firm's employ but who are not connected with any other concern. When this class of workers is of sufficient number to meet the emergency needs of the concern, there are splendid possibilities in keeping down the labor cost by making use of the foregoing plan.

Tests should be made to ascertain whether the speeds and working conditions are such as to bring about a maximum production and quality. Time study and analysis of jobs and machines will yield a profitable return on the time spent on them. Rearrangement of layout and often just a simple change in containers, or position of containers may be the means of a readjustment of production and wages that will profit both the concern and the workers. A slogan of "No workers waiting for material at any time" will go a long way toward bringing down the labor cost. Transportation too is well worth dissecting since it often yields a crop of ideas that are bound to result in a better state of efficiency.

Indeed, the problem of bringing labor cost to a minimum is a fascinating study and one which will net big results in practically every plant in which an intensive study of the pay roll is undertaken. And for that matter, it would be difficult to find any firm so exceptionally well situated that it had arrived at the irreducible minimum labor cost. The circumstances which have a bearing on labor cost are so many, so varied, and often lend themselves so readily to a well conducted campaign for the reduction of costs, that it will pay any firm handsomely to make a periodical investigation into the matter.

Hotels Demand Large Volume of Cotton.

Modern hotels are comparable to small cities in the volume and variety with which they require cotton textiles for their equipment and operation, according to C. K. Everett of The Cotton-Textile Institute.

"Cotton is as necessary in the modern hotel as in the home," he states in outlining the results of a preliminary study just made by the New Uses Section of the Institute. "The principal difference is that hotels may require several thousand times as large a supply of such textiles as sheets, blankets and towels as the individual home. In New York's newest hotel, the New Yorker, initial requirements call for the purchase of approximately 60 miles of toweling. This is enough to supply the annual needs of a city having a population of 30,000.

"Sheets were provided for nearly 3,000 beds. The initial order was for a quantity that would be sufficient to cover 32 acres if every sheet was fully opened and laid side my side. As an indication of the trend toward larger sheets for comfort and economy it is significant that all sheets in this new hotel are to be at least 108 inches long. Some will exceed this length. Two widths, 72 inches and 90 inches, were specified.

"Cotton will also be used in the new hotel for such purposes as window shades, in curtains, bedspreads, uniforms, smocks and aprons of maids, waitresses, attendants and seamstresses. It is stated that the aggregate of textile requirements including blankets, spreads, sheets, pillow cases, bath towels, hand towels, table cloths, napkins, dish towels, etc., amounted to approximately 400,000 items."

Lancashire To Have Special Cotton Week.

Cotton manufacturers in England and Europe are following the lead of the American cotton textile industry in organizing to extend the use of cotton goods, according to a special report just submitted to American cotton manufacturers by George A. Sloan, president of The Cotton-Textile Institute.

"Recent advices from Manchester state that plans are under consideration for a special cotton week in Lancashire and throughout Europe during next July," Mr. Sloan's report says. "A demonstration of new uses of cotton at the Lancashire Cotton Fair in February has also been proposed. The Institute has been invited to prepare an exhibit of its work in developing new and extended uses and is now assembling material that will be forwarded to Manchester as a display during the Fair.

In the same report Mr. Sloan states that the institute is serving more and more as a clearing house for fashion information concerning cotton. This has been particularly noticeable since the new fabrics for 1930 were brought out. Representatives of retail merchants from all parts of the country have visited the Institute offices in recent weeks seeking information as to new trends in styled cottons.

Special attention was directed by The Cotton-Textile Institute to the merchandising opportunities for increasing the sale and use of cottons for holiday gifts and from the reports so far received it is indicated that these activities were helpful in maintaining a substantial distribution of cottons in holiday trade.

Human Relations *in the* Textile Mill

By George S. Harris
President, Exposition Cotton Mills.

HERE IS a heart-to-heart talk with one of the leading mill presidents of the South. Mr. Harris has had a varied experience, and has held positions as overseer, superintendent, agent, and president. He has thus moved up the channel down through which the personality of the chief executive must flow to touch the employees, and back through which their reactions and viewpoints must reach him.

In this brief discussion, he reveals some of his own findings in dealing with employees; and points to some of the cardinal points necessary for the executive (whether he is an overseer or a president) in dealing with people.

EDITOR COTTON.

PERSONNEL MANAGERS have come to be most important officials of our large institutions. These men and women are carefully selected for this work because of their peculiar fitness. In fact, I am willing to say that a good personnel manager has a very definitely defined character which is not found in the average person, and without which success is impossible. In our smaller institutions, the personnel work must of necessity be carried on by the chief executive with the help of his subordinate executives, some of whom have been selected because of their strength in other lines, and this quite often is the direct cause of misunderstandings.

Industrial relations, as between employer and employee, have always been, and probably always will be, subject to shifting conditions and influences. In the days of hand power operations in comparatively small plants, employers were much closer to their employees than they are today in our large complex organizations. Formerly, the employer worked alongside his few employees and was familiar with their mental reactions. Today, the chief executive must reach the man in the ranks through a maze of superintendents, department heads, section foremen, and sub-foremen, which results quite often in a serious misunderstanding on both ends of the chain. When such a misunderstanding develops, correction should be made as quickly as possible. If the employer is not aggressive, some move is apt to start from the other end, which usually develops trouble for all parties concerned.

Mr. HARRIS.

One of the chief causes of ruptures of this character is the employer's inability to foresee reactions to his own movements. He should have full knowledge, at all times, of the conditions surrounding his employees, including not only working and living conditions, but also any influences that might be present to create adverse mental reactions. With such information in his possession, he should carefully weigh all possibilities in his deliberations, and make no move affecting his employees, either directly or indirectly, before determining definitely all reactions that might develop. In other words, a successful employer should not only be able, but should be *naturally* inclined to think at all times in terms of his employees. To do this effectively, he should have had ample experience in the ranks to be able, while at his desk, to transport himself mentally into the plant and think as the man at the machine would think. Success here might at times depend upon the executive's imaginative ability. Fuller Callaway, years ago, illustrated this with his story of a lost cow.

It seems that in one of our southern country towns, a man had lost a very valuable cow, and was unsuccessful in his efforts to locate her. At the village store one day, he was telling a group of farmers of his loss, and offered a handsome reward for the return of the cow.

Shortly afterward, the group was amazed to see Jim, a sort of half-wit boy character of the town, walking up the road with the prized cow intow. Wondering how this boy could have found the cow so readily after the attempts of many of the men had failed, they asked him how he did it. "Well," Jim replied, "I just went out to Mr. Brown's barn, where he saw his cow last, and I said to myself, 'Now if I was a cow, where would I go,' and I went there, and the old cow was there."

I have in my experience met some unexpected reactions in my relationship with cotton mill employees, and in my earlier years as an executive, found myself in some very tight places by reason of my failure to forecast the mental reactions of my employees.

I am impressed with the inclination of some employers to under-

rate the value of their employees. We devote our efforts to the erection of good substantial buildings in which to house our business; we think seriously of our financial set-up, our trade connections, and many other vital requisites—while the real asset of them all is what we call our organization, without which all else might easily be of no value. Fixed assets can quickly become liabilities if the organization fails to function properly, and this organization is something that we can not buy with gold. Often, it is bought through the personality of one man, and more often it is built through this same personality.

Executive's Character is Reflected.

It has been said that an organization reflects the character of its chief executive, and from my observation, this is very true. A department reflects the character of the man or woman directing it, but it also reflects, to a very great degree, the character of the directing head of the business. A department head may be that type of man who naturally stimulates the best there is in men. Through his daily contact with his subordinates, his natural inclination is toward developing loyalty and correct thinking.

On the other hand, the *chief* executive may be of that most unfortunate disposition, that wants to fight at every drop of the hat, and this will offset, to a very large degree, the influence of a good leader at the head of one of his departments. Such an executive feels that it is up to him to raise a fuss with somebody whenever a mistake has been made. It does not occur to him that to err is but human, and that it might be much more impressive to get down and help the man through his troubles, building character and loyalty in the process. It is far easier to build resentment than loyalty, in the heart of an employee, but I wonder how many executives fully realize this. The successful employer is one who makes a careful study of his employees, and keeps thoroughly in mind that an ounce of real loyalty is more valuable than tons of efficiency.

My idea is that every effort should be made to make employees feel that they are a part of the business—and a very important part at that, which is true. I do not mean that definite lines of rank demarcation should not be maintained, and that employees of all ranks should be permitted to feel that they have a right to enter into the direction of the business; but they should be encouraged to feel their importance in the success of the enterprise. The subordinate executives should be given such of the vital facts as are consistent with good policy, and should be encouraged to express opinions. Ideas make or break a business, and the office boy sometimes brings in a corker.

Under present-day system of mass production, where a man continues to do the same routine work of a few operations day in and day out, we are prone to forget what might be his trend of thought when his mind is not required in production, and this may be a considerable part of his working hours. His work is of such routine nature that his thinking machine may at times go far afield, and may sometimes develop trouble. It is much more difficult to hold his interest in the business, under such conditions, than it is when his work, by the very nature of it, holds his attention.

Various and sundry schemes have been used to direct the mind of this type of worker, while his hands are going through movements that from continual repetition have become mechanical. The most popular of these are bonus systems of pay in various forms. These are effective, but so many in time lose their effectiveness. Many employers have adopted the plan of selling their employees stock in their company to stimulate their interest, but this is of very questionable value. The chief objection is the danger of urging a workman to invest his earnings in the stock of a company on which he depends for his daily bread and butter. In case of disaster, he loses his job and savings at the same time.

There are better means of maintaining the workmen's interest, and developing loyalty, all of which depend, to a very great degree, upon the character of the employer. A workman, to be efficient, and loyal to his company, must at least think that he is as comfortable and has equally as good a chance of advancement as he would if he were in the employ of some other company. He can not possibly do good work if, while working, he is thinking of the pay some friend is getting in some other organization. Again, he is quite apt to lose interest if he sees his employer reach out into another plant for a man to fill some desirable position, when he probably has a man in his own organization whom the men believe to be competent to handle the work. A very effective scheme to obviate this possibility has been called the three-point plan of promotion. Under this plan, no man is eligible for promotion until he has proven his absolute loyalty to the first man above him, and also has trained a man below to fill his position. It is a perfect organization, when every man is pushing forward the man just ahead, and is pulling up some man from the rank just below. If an employer is careful in his selection, and develops this idea in the minds of all in his outfit, he will never find it necessary to go outside for anyone.

Editor's Note: The foregoing is abstracted from a recent address before the Atlanta Personnel Association.

"Labor."

E. A. Terrell, president of the Terrell Machine Company, Incorporated, Charlotte, N. C., has published an elaborate and interesting book entitled "Labor", the purpose of which is explained in the foreword by Mr. Terrell as follows: "Much is being written about the machine age's ruthless destruction of manual labor's happiness. Herein are a number of pictures of labor before the machine age made it possible for labor to control millions of horsepower in the mass production and rapid distribution of commodities sold at price levels where labor itself is the largest purchaser. It is a question who deserves the greater congratulation—the manufacturing executives who have brought the machine age into being or the workers of the machine age."

There are in the book eleven interesting illustrations, drawn by Herbert L. Daugherty, depicting scenes of labor at the Egyptian Pyramids; Babylon's Hanging Gardens; the Great Wall of China; The Phoenician Galley; The Roman Aqueducts; The Sedan Chair; The Pearl Diver; The Volga Boatman; Early American Pioneers; The African Safari. The last illustration typifies the application of the machine age to industry and commerce.

Lustering *by* Calender Finish

By Thomas F. Hughes

A SILKY luster, resembling that produced by mercerization, can be given to cototn cloth by means of what is known as a calender or Schreiner finish. This is accomplished by passing the cloth between rollers under heavy pressure, one of the rollers being engraved with obliquely-set lines, ruled from 125 to 600 to the inch. The effect is to produce a great number of parallel, flat surfaces on the cloth, which causes it to acquire a very high luster.

By conducting the operation with hot rollers, quite a permanent finish can be produced which closely approximates mercerized cotton. Cloth so finished, however, loses its luster in a large degree in washing. Various methods have been devised to make this method of lustering a permanent character, and with more or less success, such as treatment of the calender goods with steam under pressure, or by finishing the cloth with a fine layer of size which is insoluble in water.

The present day so-called luster finish is obtained by first finishing the cloth in the engraved calender for silk luster and then fixing on another calender at high temperature and under great pressure. The higher the temperature, the more luster is obtained. Cotton piece goods, cotton plush, velvet and other fabrics, are first submitted to a preliminary treatment. This consists in the goods being strongly moistened and a high shiny gloss then imparted to them by means of hot calendering. The shiny gloss so produced, is then for the most part fixed by submitting the goods, preferably in a stretched condition, to heat of a very high temperature by passing them, for a long time, through a very hot calender.

In producing the gloss by the calender process, temperatures of 400 degrees C. and over are used. By the action of the heat, a part of the gloss produced is lost, owing to the displacement of the fibers, and cannot be fixed by the heat. In order to remedy this defect, the goods are previously treated by any shiny adhesive material, preferably containing starch. The goods are then drawn off, that is, treated with water, soap solution, live steam, or other solution, and if starch has been employed with malt, or malt extract, the fatty gloss disappears and a clean and equable silky gloss remains, which is then water and soap proof. The amount of gloss obtained depends primarily upon the amount of gloss imparted in the preliminary treatment.

The degree of fixing, however, depends principally upon the temperature to which the action, that is, the fixation of the gloss, is proportionate. The heating is therefore carried on as far as possible without damaging the goods. The materials are passed, while quite wet, through strongly heated rollers, with slow speed, and in spite of the great pressure and the high tempearture, they emerge still wet. The water acts in this case as a protective means in that it limits the effect of the heat upon the surfaces and protects the center of the material against destruction by the penetration of the heat, so that a superficial luster is formed only by the areas of contact of the material with the calender rollers. At the same time the steam from the material upon pressing removes in one operation, the base and impermanent part of the luster without any special subsequent dampening being required first.

In order to provide the material with permanent luster on both sides, it is passed through two calendering machines in series, one after the other. The steel roll of one calender lies beneath, and that of the other, on top. In order to raise the flattened shape, the cloth can, if desired, be subsequently soaked in hot water. Instead of employing simple pressure, the latter may be combined with friction by different speed of the two rolls, placing them obliquely, and so on. Any kind of a roll may be employed as the pressure roll either polished or engraved for embossing and this process can be employed on mercerized or non-mercerized fabrics. I will describe here a combination of mercerization and goffering to obtain patterns in relief that will withstand washing.

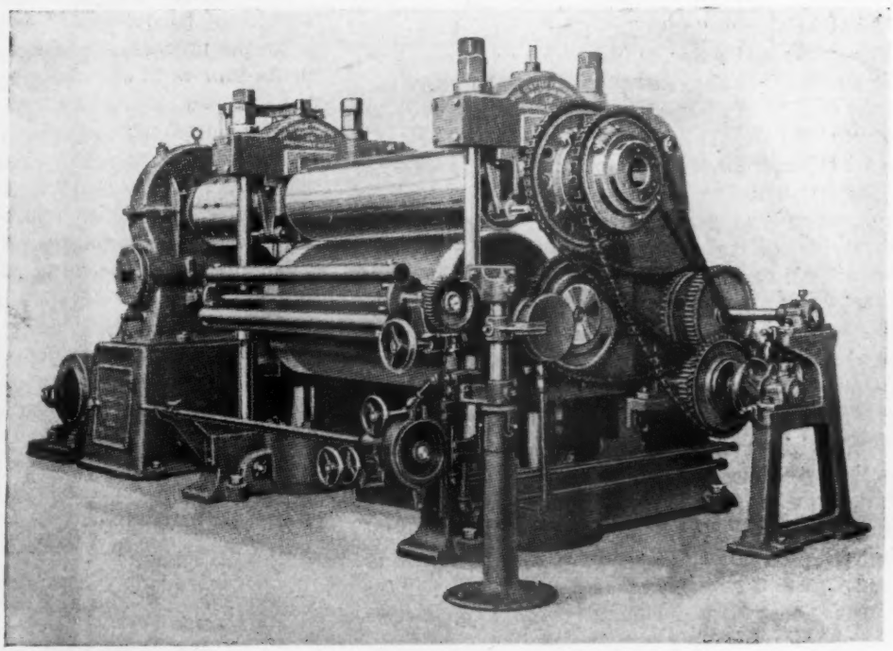


Illustration from Textile Finishing Machinery Co.

Hydraulic Schreiner Calender.

The fabric is passed between two calender rolls, one of which bears the pattern in relief, the other in intaglio. If the two rolls are in register, the pattern will be printed without distortion, and at the same time, both warp and filling threads will be stretched in the pattern. If the fabric is then treated with caustic soda lye by passing it over a roll turning in the lye, but with the unprinted side in contact with the roller, the contraction of the wrong side will make the pattern permanent, and the caustic soda lye answers best in this particular manner of use if thickened with dextrin. The goods are then calendered and prepared in the usual manner, and these patterns are fast to boiling water. If the raised parts of the pattern are treated with a reserve to protect them from the mercerizing lye, a similar effect is obtained. Another method is to paint the raised parts of one roll with a thickened lye so that in contrast to the last method it is the pattern that contracts instead of the ground.

Dyeing effects can be obtained with fabrics treated this way, according to the parts that have been mercerized, and according to the degree of ornamentation, and, for example, light patterns on a dark ground may be readily obtained. White raised effects can be made on a colored ground by adding dyes to the mercerizing lye, and interesting and valuable effects can also be produced by raising the pattern effects and can also be produced by raising the pattern in relief on the gig so that the raised parts show up strongly on the unraised and flat-looking ground portions of the design.

Another method of goffer-lustering is as follows:

To a mixture of 455 grams of sandarac gum and 910 grams of castor oil, 113 grams of fine celluloid waste and amyl acetate reduced to a paste, are added, and finally, 2.5 liters of methyl alcohol to give a syrupy consistency. The fabric is sprinkled with this composition and passed into the goffering rollers and then dried.

Another important finishing method for cotton piece-goods and other fabrics where the character of the surface is changed by mechanical means to give it the quality of chamois or moleskin, is known as the Duvetyn finish. This finish is produced in cotton fabrics by "emerising." It has enjoyed a great run of popularity, and is still in much demand. It has always been worked as a secret process, different finishers employing different methods, differing perhaps in some detail or another.

Experience with this work has brought great improvements. The "emerising" process is used generally on cotton piece goods, woven in such a way that the filling floats on the face of the cloth and the warp on the back, much the same as a moleskin. This process of finishing does not require any special treatment in the weaving, and is as equally well adapted for carded woolen fabrics and worsted as well as for cotton piece goods. The fabrics are "emerised" either in the gray or after dyeing or printing. The process changes the surface of the cloth, and gives it the appearance of velveteen, chamois or the skin of the mole. The operation is very simple and consists of subjecting the cloth in two or three passages to the action of several rolls which revolve rapidly in a direction opposite to that in which the cloth is moving. These rolls are covered with emery cloth. Pulverized flint, stone, glass or sand, may be substituted for the emery. The action of the emery-covered rollers on the filling of the cloth produces a very short, thick nap, with the fibers standing straight from the surface of the cloth. The extent of this action depends of course, on the nature of the fabric to be finished, and is regulated by the tension of the cloth, the speed and number of rolls, and on the firmness of the emery with which the rollers are covered. Of course, all rolls in this machine are made of wood, so that the emery cloth can be glued on and pegged.

It is evident that carded woolen goods can be finished by this process more easily than worsteds, owing to the twist of the yarn. Emerising differs radically from napping or raising on the ordinary raising machine, as the latter tears the fiber from the thread in order to get the nap. Emerising consists, not in tearing the fibers out, but in wearing or polishing the surface. In order that the nap may be uniform, it is necessary that the fabric should possess a certain degree of stiffness, and for this reason, the cloth is heavily sized, and this prevents the action of the emery penetrating deeply into the fibers. The ordinary glue used in finishing answers the purpose, and after it has been applied, the material is dried thoroughly before emerising. By covering the rolls with bands of emery, a finish can be produced in the form of stripes, and may be cut wide or narrow.

Crepe Effects by Mercerizing.

Crepe effects may be produced on all cotton goods by employing mercerized cotton yarns for the warp and suitably protecting these with gum and then using plain cotton yarns for the filling, and finally mercerizing the woven fabric. The filling yarns will then contract and thus give a crinkled or creped fabric. Crepe effects on cotton-wool fabrics may also be produced by the process of mercerization. If cotton is used in the fabrics in either stripes or pattern effects, it may be shrunk suitably by treating the fabric with a strong solution of caustic soda without tension. If a caustic soda solution of 50 degrees Twaddle is used at a temperature below 10 degrees C., and for one to three minutes, the cotton will be properly shrunk without affecting the strength or quality of the wool, the latter fiber only becoming somewhat lustered and hardened.

Another method of creping cotton fabrics is to employ the mercerizing reaction in connection with printing. By printing on a strong caustic paste in stripes or other pattern effects that portion of the cotton fabric subjected to the action of the caustic soda will contract considerably, leaving the rest of the fabric in its natural condition. In this manner, seersucker, and crinkled effects of various kinds may be obtained. After the caustic soda paste has been printed on the cloth, it is run for a space so as to give the necessary time for the completion of the mercerizing, but it is not dried as in ordinary processes of printing, as the drying-in of the strong caustic soda so-

(*Continued on page* 413.)

Rayon Oils *and their* Removal

Type of Oil Best Suited in Each Step Where Rayon is Oiled; Scouring of Rayon for Dyeing or Finishing; Uneven Scouring, Etc.

By Chas. E. Mullin, D. Sc.
Professor of Textile Chemistry and Dyeing, Clemson College, S. C.
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THE common practice of most rayon manufacturers today is to "oil" the rayon during one of the last wet operations before leaving the factory. Frequently this is done, in the case of viscose, by the addition of soap or a suitable soluble oil to the last rinse water in the desulphurizing process. As these oils must be easily removable from the yarn, so that it may be dyed properly, it is common practice to use only soaps or soluble oils for this purpose. In the selection of these soaps or oils, however, it is desirable to select those made from highly refined, non-dyeing, saturated (chemically) fatty, oils, so as to avoid the possibility of drying or the development of rancidity upon the yarn during storage.

Where the rayon is dyed in the skein, some lubricant is usually applied by the dyer in the finishing operation, so that the dyed material will not have too harsh a handle and will have better winding and working properties. For this purpose it is common practice to use either a soluble oil or an oil emulsion, similar in many respects to some of the wool oil emulsions. In some cases pure mineral oils have been and are used for oiling rayon at this stage but they are probably not the best for the purpose, in that they are too hard to scour out later, as may be necessary in many cases. Many of the oil emulsions offered for this purpose are composed of animal, vegetable, or mineral oils, or blends of these, with a suitable emulsifier such as soaps, sulfonated oils, emulsifying bases, etc. They are frequently applied in the dye-bath or in the last rinse water after dyeing.

Even though the rayon has been oiled by the manufacturer, or by the dyer, most knitters and many weavers give it an additional oiling before use. The purpose of this last oiling is usually three-fold. It serves to further soften the yarn and lubricate it through the processes of manufacture (knitting or weaving), as well as to reduce the amount of moisture taken up by the rayon in the highly humid atmosphere of most weaving and knitting rooms. The strength of rayon depends a great deal upon its water content and by saturating the rayon with oil, less water will be taken up from the atmosphere by the oily fiber, which results in less breaks in the process of manufacture.

Where the goods are manufactured "in the gray" and subsequently dyed, it is absolutely essential that any oil used upon the rayon in any and every stage of manufacture be readily removed by scouring. Even though the goods are manufactured from colored yarns, it is usually desirable and often essential that the oil be readily removable. However, as far as the softening and lubricating qualities of the oil is concerned, a pure mineral oil of suitable grade is perfectly satisfactory. The mineral oil is probably the best too in preventing the absorption of moisture from the air. But when it comes to the matter of removal, either for dyeing or finishing, it often presents serious difficulties. For this reason the best and most satisfactory results, in the long run, are obtained by the use of oils which readily emulsify in the scouring bath. Due to the fact that it is a function of the oil to prevent or retard the absorption of moisture at this stage of the manufacture, whatever oil is used, should be applied straight, i. e., as the pure oil without dilution or emulsification with water. This is commonly done by soaking the skeins in oil and then hydroextracting, although sometimes they are merely allowed to drain, without extracting, before use.

Scouring Rayon.

One of the main causes of trouble in handling rayon, has been the common saying that "rayon acts like cotton". Rayon does act like cotton more or less in many ways. It does not dye exactly like cotton and it is certainly not affected exactly like cotton by reagents such as sodium hydroxide in scouring, or chlorine in bleaching. Probably many of the difficulties arising in uneven dyeing, etc., which have been and are commonly attributed to unevenly manufactured rayon, are really due to irregular handling or lack of control of the preliminary operations in the consumers plant and are not the fault of the rayon manufacturer.

While cellulose is commonly considered to be more or less inert chemically, it certainly is not quite as inert as some people would like it to be. Then when it passes through the chemical processes used in the manufacture of rayon, which in the case of viscose consist of a strong mercerization and solution in carbon disulphide, besides the precipitation, desulphurization and other minor steps such as ripening, etc., it appears that the cellulose becomes much more reactive chemically than formerly.

It is common to find that the more highly hydrated compounds are more reactive chemically than the corresponding anhydrous compounds. Take aluminum hydroxide for an example. And we know that the older regenerated cellulose rayons are a form of regenerated cellulose having a greater affinity for moisture than the original cellulose. This is plainly shown by their higher regain or moisture content under the same atmospheric conditions as cotton. In the same way, mercerized cotton, which is known to be more reactive chemically than the normal cotton, has a greater affinity for moisture, as shown by its regain, than normal cotton. Higgins, *J. Soc. Chem. Ind.* 28, 188 (1909), gives Tables I and II showing the comparative regains

of ordinary and mercerized cotton. Prof. Johnson, *American Dye Reporter* 14, 875-8 (1925), gives Table III showing the comparative regains of mercerized cotton and the regenerated rayons.

TABLE I
Comparative Regains of Normal and Mercerized Cotton

Ordinary Cotton, unbleached	6.52 per cent regain
Ordinary Cotton, bleached	6.25 per cent regain
Mercerized without tension, unbleached	9.33 per cent regain
Mercerized without tension, bleached	9.12 per cent regain
Mercerized with tension, unbleached	8.28 per cent regain
Mercerized with tension, bleached	8.05 per cent regain

TABLE II
Variation in Regain with Strength of Mercerization Treatment

Ordinary cotton	6.20 per cent regain
Mercerized with NaOH at 10° Tw.	6.37 per cent regain
Mercerized with NaOH at 20° Tw.	6.68 per cent regain
Mercerized with NaOH at 30° Tw.	8.40 per cent regain
Mercerized with NaOH at 40° Tw.	9.41 per cent regain
Mercerized with NaOH at 50° Tw.	9.43 per cent regain
Mercerized with NaOH at 60° Tw.	9.57 per cent regain
Mercerized with NaOH at 70° Tw.	9.69 per cent regain

TABLE III
Comparative Regains of Mercerized Cotton and Rayons at 22 C. (72 F.) and 61 to 72 per cent Relative Humidity.

Mercerized cotton	8.24 per cent regain
Viscose Silk, 300 denier	15.5 per cent regain
Nitro Silk (Tubize), 150 denier	16.6 per cent regain
Cuprammonium silk, 120 denier	16.0 per cent regain

These tables indicate that even cellulose itself may be more reactive chemically after the mercerization treatment than normal cellulose and such is certainly the case. Every dyer knows how much more readily mercerized cotton takes up dyestuffs, to give even very heavy shades, than normal cotton and how much more difficult it is to obtain level shades on mercerized goods. In the same way, in the esterification of cellulose to form cellulose acetate or other esters, it is found that both mercerized collulose and hydrocellulose react much more readily with the acid than the normal cotton. In other words, the chemical treatment seems to open up some new groups, bonds, or valencies in the cellulose molecule which are then ready to combine with suitable reagents.

From the above we may expect the rayons, viscose, nitro and cuprammonium, to be more easily affected by most reagents than the normal cotton fiber and we are certainly not disappointed. Most dyers recognize that it has a greater affinity for the direct dyes than cotton. In fact A. J. Hall, *Jour. Textile Institute* 18, P 223 (1927), has recently shown that viscose is actually dissolved to some extent by sodium hydroxide solutions, the amount depending upon the strength of the caustic solution. Upon this basis, it is not entirely unexpected that the luster, dyeing, and some other properties of viscose may be altered more or less by such a severe scour as may be necessary to remove a mineral oil lubricant from it, that is, a mineral oil which has been applied pure, without any other addition or blending. In much the same way it is possible that the dyeing properties of the rayon may be altered more or less in the process of bleaching or chemicking, or elsewhere in the plant.

For this reason, in the selection of oils for use upon rayon in any stage of manufacture, while a straight mineral oil, of proper cold test, fluidity, gravity, etc., may answer the purpose of lubrication, etc., even better than a blended oil, in the majority of cases it should not be used if the very best results are desired. Any oil which it may be necessary to remove from the rayon at any time should be readily emulsified by an aqueous soap solution containing a little ammonium hydroxide or sodium carbonate. Sulfonated oils, solvent scouring mixtures or oils, etc., are also sometimes very useful in mill scouring. It should never be necessary to use sodium hydroxide in scouring either the cotton or the rayon in goods containing the latter. Further, the oil used should have a low cold test, good penetrating properties, high flash point, and be of the non-drying type.

pH Control.

The matter of pH or hydrogen ion control seems to be creeping into every phase of industry lately. Even the textile industry, and it appears possible that this may be another application for it in the textile industry, as a further aid in obtaining level and uniform colors upon rayon.

Rayon Institute Concludes Its Two Year Campaign.

Recent announcement of the conclusion of the two year campaign of The Rayon Institute of America, Inc., caused those in textile trade and retail circles to recall that the organization was formed late in November 1927 for a period of six months. Expansion during this time has resulted, it is understood, from the high calibre of the work accomplished and the demands made upon its backers by manufacturers and retailers for an extended period of promotional activity and educational aid.

Prior to the origin of the Rayon Institute, few lay consumers held a consistently high conception of rayon's wide gamut of usefulness and fashion importance. Vast amounts of misinformation were in general circulation. Rayon's range in qualities and many inherent estimable characteristics were overshadowed by myths, ignorances and doubts based upon original impressions gained during the purely experimental days of its first introduction to this country. Rayon-consciousnesss, as a result of the Institute's work, is felt to have been inestimably increased.

New Development in Nyanza Yarns for 1930.

The Nyanza Mills state that they have recently developed a series of original color combination in their yarn products based upon the new Spring colors sponsored and adopted quite generally by stylists as those that will be assured of the greatest popularity for outwear fabrics during the 1930 season.

These new yarns that are specially adapted for knit outer garment fabrics, are composed of a variety of fiber blends that include spun rayon, (introduced under the copyrighted trade name of Nyon) wool and cotton in various percentages. They are slub dyed, or in other words, dyed in advance of spinning.

The producers state that one of their outstanding yarn products is composed of 50 per cent Nyon and 50 per cent wool, and that this yarn, when knitted, results in a particularly fine and durable dress and sweater fabric and is also suitable for kiddies' jersey type of garments.

Among the new, color tones that are being introduced are, Arabian Brown, Tropic Red, Lobster Red, Water Green, Sprig, Jasmine Indian Turquoise, Persian Melon, Linen Blue, Fleet Blue and Nipon Yellow.

Many Concerns Licensed to Employ Durene Label.

Two hundred and eighty-three manufacturers, mainly producing hosiery and underwear and including some of the most prominent concerns here and abroad, have been licensed by the Durene Association of America to employ the Durene label on their products made from these yarns, it was recently announced at the offices of the organization's Merchandising Counsel Division. Of this number, 259 are American manufacturers located in 26 textile-apparel producing states, 22 are Canadian firms, while Australia and Cuba are represented among the licensees by one firm each.

Cotton Dollars

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Chas. Provost, Mgr.

TEMPE, ARIZ.
S. J. Carter, Mgr.

CURRENT TOPICS

"Pictorial History of Textile Machinery"

AGAIN WE DIRECT attention to the feature under this heading, which appears in this issue on page 430. The first section of this series of some of the original and earlier types of textile machinery appeared in the January issue, when a photograph and description of Arkwright's carding engine, or card, of 1775 were presented. The original lantern type of drawing frame is shown in the present issue. Subsequent installments will show and describe other familiar machines of today, showing how they appeared and operated at their inception, and pointing the contrast between the original machinery and that in operation today.

As indicated here last month, it is hoped that the presentation of this series of illustrations and descriptions will prove interesting and informative to the mill man.

Talk of the Month

NOW THAT we have gone through the period of the year when forecasts are the rule, it may be timely to say that, whereas conjecture was the guide of the rule-of-thumb days, something better has come into being. We still must forecast the trend, for no distribution would be possible without anticipation of the wants and desires of the public, but recent years have brought a transition whereby scientific analysis robs the future at least of part of its uncertainty. It is available as a guide within and without the cotton industry. In the endeavor to cope with the post-war complications, the textile industry as a whole has made a most encouraging advance in the adoption of research. Herein is the hope of the broad restoration of this industry to a healthy position in American economic activities.

A Grain of Salt is Necessary

Speaking in a general way, we are inclined to state that a heavy discount must be allowed on the New Year's prognostications which flood the country. There is always unbounded optimism in the words of those who speak in generalities on the year's outlook. Indeed in the midst of depression, the facts talk loudly enough of themselves and it were well not to stress them. No doubt the best way is to set forth the best possible picture. One can imagine what the pall of gloom would have been could anybody have forecast in 1920 the vicissitudes through which the textile industry has passed in the ensuing decade.

In the words of the New York Journal of Commerce, however, "vague optimism without anything to support it does harm and not good. Something tangible is the great desideratum. The period of depression will have served a good purpose if it has been provocative of new measures which will afford a rule and guide for the next decade, or for the indefinite future. There are signs that research, scientific analysis and studies of various kinds are being provided in various industries to fill this great need. The evils of the past are being put under a strong light which not only reveals them clearly, but this revelation shows the way to relief.

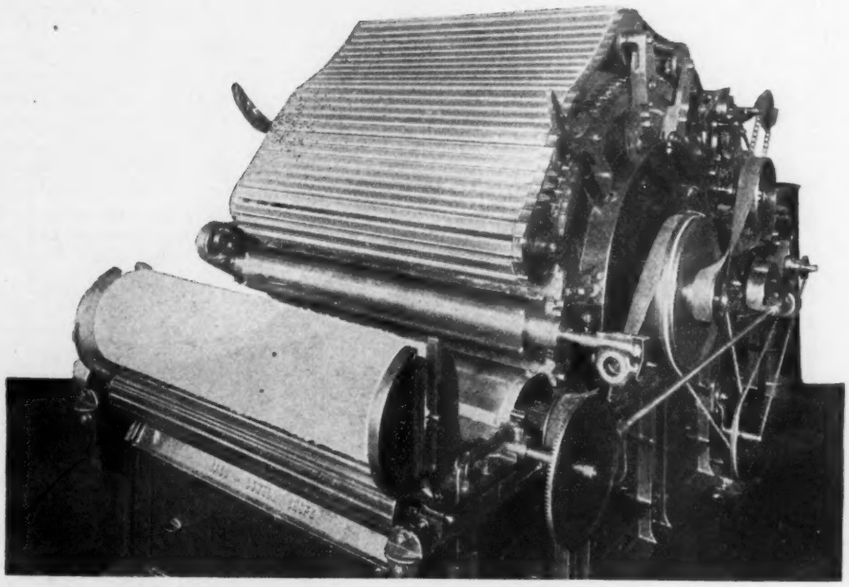
Regulate Production to the Demand

Science has a wonderful faculty for doing the practical. All it wants is problems. It has been turned to account in industry on the production end till it has veritably created new problems of distribution. Now it has tackled these problems and gives signs of providing healthy remedies for the ailments in distribution. A notable case is the spread of the idea that forcing demand by price-cutting is a futile thing. Uneconomic price-cutting adds nothing to the total demand and defeats the intended purpose for the reason that buyers are timid about buying on a declining market. Co-operation is the scientific means adopted to lay this spectre and cotton manufacturers would profit by studying what other industries are doing in this line. The wool industry took a notable stand on this matter in December and it was also reported that they were planning to curtail rather than try to force demand in a dull period.

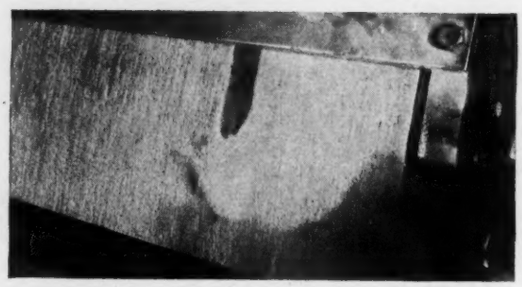
The cotton industry has led textiles in one notable idea in recent years and that is the direction of distribution. Turning from the business of mere production several years ago, the mills on dress goods and other fabrics of such nature have made great strides in reaching toward the ultimate consumer with their own advancement of style and design. In this connection, the Boston News Bureau recently put forth the suggestion that possibly should be a field for new research. In place of price-cutting, cotton manufacturers should be considering getting not only prices that they have secured but larger returns.

Under the heading of "stupid merchandising," this paper editorializes on what we may characterize as failure to capitalize the initiative and investment which they have put during the 20's into new styling and designing. Undoubtedly it is substantially the enterprise of the manufacturers which has created the new style popularity of cottons. What are they getting in return? This year bids fair to be a good one for cottons, in the finished garments. We have read of almost fabulous prices for finished cotton dresses. The News Bureau argues that the mills are not getting a fair share of the margin between raw material and the dress price return to the maker. The idea is at least one to provoke investigation.

In spite of the lack of a compelling force to control production, the recent slack period for mills produced an encouraging co-operation among units acting individually to curtail output. This presumably may be



SACO-LOWELL CONTINUOUS *Card* STRIPPER



ELIMINATES STRIPPING AND GIVES MORE AND BETTER PRODUCTION

The above photograph shows the cylinder clothing after ten weeks of continuous operation with the Saco-Lowell Continuous Stripper. In the center the stock has been lifted with the point of a knife. The cotton comes off in a fine sheet and the wire underneath is as clean as immediately after the costly and inefficient hand-stripping process.

THIS new Saco-Lowell Stripper, driven from the main cylinder, keeps the cotton continually above the knee of the clothing wire. The card is always working at maximum efficiency. The doffer need be stripped only about twice a week and then without stopping the card or losing any production.

The advantages may be summed up as follows:

1. Saving of time, by elimination of stripping, equivalent at least to the production of one card in forty to fifty.
2. No cylinder strips made.
3. Even sliver all the time.
4. Cylinder wire clean all the time, resulting in:—
5. Saving of from one to two percent of the stock, represented by long fibres formerly carded out.

We have installed this Continuous Stripper in a number of mills and have received very satisfactory reports of the results obtained. May we give you detailed facts and figures about the labor savings made and the quality increases obtained? Write today for details.

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MANUFACTURERS OF TEXTILE MACHINERY

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CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

traced to educational publicity, which is practically a form of research. Trade practice has produced catch words or phrases which, in such instances as "pressure to sell," have worked havoc in the past. They have been blindly accepted as necessary evils, but the pressure of adversity has led to analysis of fundamentals of trade, and discussion has brought to light practical ideas which appear to be leading to healthy practices.

Don't Try to Use "Pressure to Sell"

At such a time, we may not do better than to suggest that careful discrimination in the use of market phrases should contribute to help matters. A refusal to recognize "pressure to sell" in times of normal lull in mill demand, for example, might be conducive of a double benefit. It might remove a sinister psychological influence and, since buyers would find the mills determined to wait for the business that obviously must come, they would have no incentive for a procrastinating policy. This outcome would militate toward an evener distribution of demand and steadier operation of mills, with consequent relief to manufacturers and advantage to employees. If the trade must have stock expressions, let it look to sound practical ones and discard uneconomical ones.

Fashion is striving to give the mills a fair break, after withholding her favor for many years. If the mills have not profited reasonably on their new styling and designing so far, it is not the fault of Dame Fashion. Now she is favoring them not only with an unwonted popularity, but her decree of longer dresses is a warranty of larger yardage of consumption. So far as the influence of the stock-market break in October and November affected cottons, the January figures of The Association of Cotton Textile Merchants of New York were encouraging. The sales were greatly increased in December over November. Stocks on hand at the end of December were increased over those November 30, but unfilled orders were increased more.

These returns were received as an eye-opened by many cotton-goods men and the value of collection of such data was recognized as never before. In fact it disclosed a healthier state of affairs than might have been considered possible. In trade, as in other human affairs, an individual may have his vision of the forest obscured by being too near the trees. It is difficult to cope with individual problems, perhaps, on theories of general business. But collection and dissemination of wholesale and factual information on an industry will work to the advantage of the individual as to the collective units, especially when it exposes fallacious ideas based upon guesswork. It seems that over-production in cotton, in fact, has been over-emphasized and apparently vicious competition could be eliminated without great strain.

Fact finders are showing manufacturers the causes back of their troubles. Given the cause, the remedy is obvious, and the comment of leaders in the industry of late confirms this proposition. They aver that regulation of production—shown to be relatively only slightly excessive—would remedy vicious price-cutting through to the retailer. They see stabilization, so long sought, in the offing. Harping on this idea cannot be overdone.

What the Southern Mills are Doing

IT IS REPORTED that the Enterprise Mfg. Co., Augusta, Ga., will replace their 35,000 spindles with the most modern type; contracts already having been given for Saco-Lowell warping, Whitin spinning frames, and Foster winding equipment. Other improvements will also be added.

The cotton mill at Cornelia, Ga., will be turned into an overall factory, under the management of M. B. Pitts, of Elberton, Ga., formerly superintendent of a group of mills in East Toccoa, Ga. The factory will employ about 125 women and girls.

The Lullwater Mfg. Co., Thomson, Ga., recently announced the purchase of a late model humidifier system. They also reported that the installation of ten special spinning frames during the month of January would increase the output of the mill and add a few additional workers to their payroll.

The China Grove (N. C.) Cotton Mills, of which A. C. Lineberger of Belmont, N. C., is president, are installing 5,000 additional spindles and other equipment for production of thread yarns. The plant has been operating 42,910 spindles on 40s to 80s combed yarns.

Machinery is being installed at Haw Finishing Works, Haw River, N. C., for the finishing of corduroys, moleskins, and other goods to be made by Tabardrey Mills. Work is in progress to make this a modern plant in every respect — the buildings are being remodeled, cottages improved, etc.

Salisbury (N. C.) Cotton Mills recently installed 10,000 spindles with Saco-Lowell-Roth system of drafting.

Burlington (N. C.) Mills, Inc., manufacturers of woven draperies, have purchased 100 automatic Crompton and Knowles wide silk looms, which completes their $200,000 replacement program. Equipment has also been purchased for a finishing department.

A number of new Stafford looms were recently installed at the Glen Raven (N. C.) Cotton Mills.

Entwistle Mfg. Co., Rockingham, N. C., recently bought two cotton mills from the Roberdel Mfg. Co., which brings the total number of spindles for this company up to 85,760 and 2,416 looms. The Roberdel Mills have 1116 looms and 32,000 spindles, while the Entwistle Mill has 1300 looms and 53,760 spindles.

Beacon Mfg. Co., Swannanoa, N. C., are planning to erect two warehouses.

A meeting of the stockholders of the proposed new cotton mill to be built in Forest City, N. C., was recently held for the purpose of electing officers. It is stated that $150,000 has already been subscribed. Present plans are for 8,000 spindles and about 60 looms, for the manufacture of tapestries, bed spreads, damask, upholstering and other novelties.

Work on the addition to Haynes Mill, Avondale, N. C., was started in January. It was announced that carding and spinning would occupy the newly created space, and that night work would be discontinued.

It has been announced that A. F. McNally would begin construction of new building for A. M. Johnson Rayon Mills at Burlington, N. C.

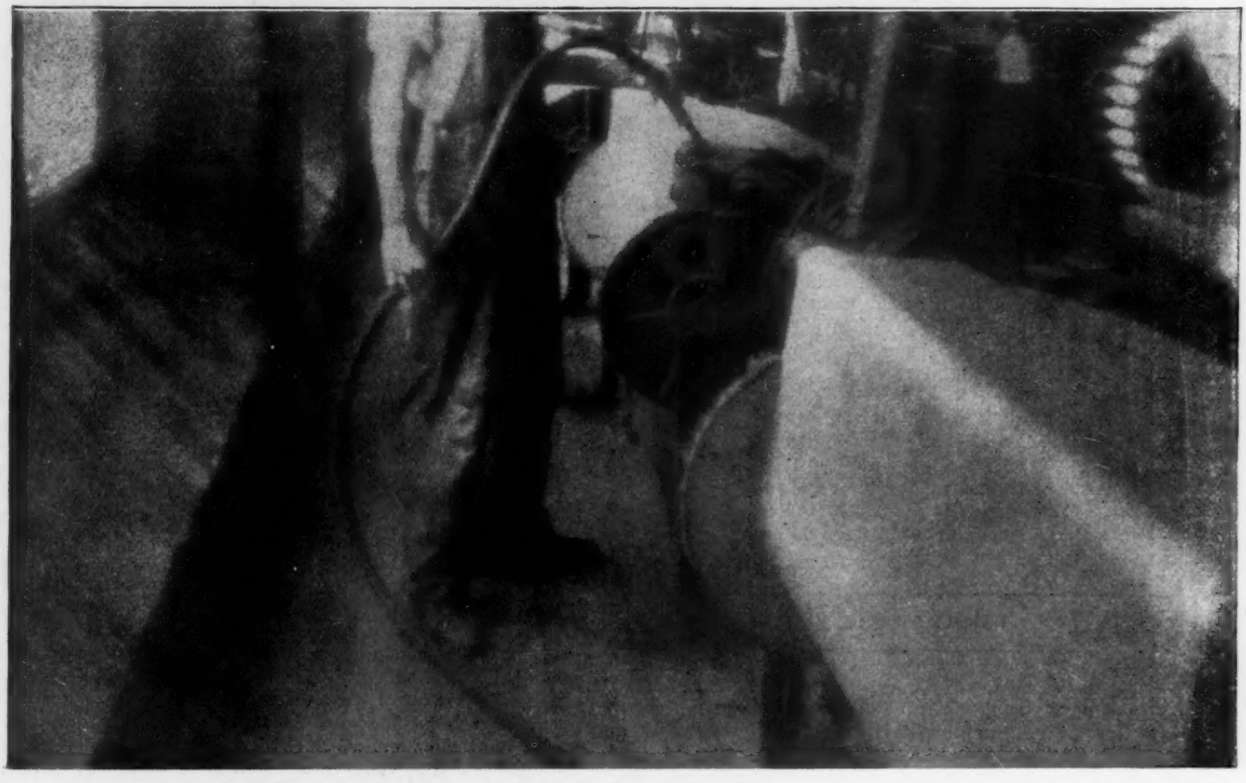
Springstein Mills, Chester, S. C., are replacing 462 of their gingham looms with 360 Draper automatics—148 of the old looms being retained for the manufacture of ginghams.

As previously announced, plans for construction of a $2,000,000 finishing plant and installation of 21,000 spindles in the Aiken, Langley and Clearwater (S. C.) Mills have been completed. The finishing plant, upon completion, will handle the output of the three mills, now known as the Loring group. Charles T. Main of Boston, is the engineer.

Charles Mills Co., Red Springs, N. C., has installed three Universal quillers, two Benjamin Eastwood skein winders, and one Saco-Lowell rayon slasher. The rayon department is specializing in shirting and dress goods.

Fairforest Finishing Company was to begin operation of its new $1,000,000 plant, which is located near Spartanburg,

A FINE HOSE FOR YOUR MILL



Goodyear makes an especially good hose for textile plant clean-up purposes. It is in general use and favor for blowing lint out of machinery. It is made flexible, to permit of easy handling around machines and fixtures; it is built strong to convey and withstand full pressure; it is oil resisting throughout. The name of this hose is Goodyear Wingfoot Air Hose. It lasts a long time, operates most efficiently, and is therefore very economical. Write to Goodyear, Akron, Ohio, or Los Angeles, California, for detailed information about Goodyear Wingfoot Air Hose.

The Greatest Name in Rubber

GOODYEAR

S. C., about the middle of January, according to announcement by H. Arthur Ligon, treasurer of the company. Approximately 200 workers will be employed at the outset, and the capacity of the plant will be 1,500,000 yards of finished goods per week.

Walcott and Campbell Spinning Mill was recently reported to have opened several units of their new plant at Gulfport, Miss. They announce that other units will be opened from time to time, and that when in full operation there will be 20,000 spindles, which will require 300 workers. The experienced operatives secured from other points will be replaced by local labor later, officials of the company stated.

It is reported that the B. A. Forster Cotton Mills, located at Harlingen, Texas, have ordered 40 Draper looms, to be equipped with Jacquard motions. B. A. Forster, formerly of Chicago Heights, Ill., is in charge.

It is announced that a mill for the manufacture of blankets will soon be built in Jackson's Mill, W. Va.

The Viscose Co., Parkersburg, W. Va., has awarded contract to McClintic-Marshall Co. for 2080 tons of structural steel, to be used for the second unit of the rayon mill.

The Albemarle Weaving Co., Charlottesville, Va., are planning on expansion. The company begun operations in 1927.

Texas Gauze Mill, at New Braunfels, Texas, started operating at full capacity during the month of November, and it is now stated that the annual output will be 1,000,000 yards, which will all be shipped to a northern firm. The erection of a second mill of this type in this city is being considered.

The Durham Hosiery Mills have installed in their fine yarn mills at Mebane, N. C., a set of Breton Minerol process equipment for treating cotton with oil. This equipment was furnished by the Borne Scrymser Co.

Edenton Cotton Mills, Edenton, N. C., recently installed the Borne Scrymser Company Breton Minerol process for spraying cotton with oil.

New England Mill Situation

January 15, 1930.

AN OPTIMISTIC SPIRIT prevails in the New England textile industry at the present time. Most of the better managed firms completed a fairly successful year, although it was one of gradual adaptation of the industry to new conditions and new trends in the public demand which will continue to be felt for some time to come. New England mills generally are of the opinion that they have seen about their worst period and in nearly all quarters sentiment is strong that 1930 will be a year to be remembered with satisfaction.

At the present time mills in the larger producing centers are operating on a scale in keeping with the rather limited demand that was apparent during the closing two months of 1929, and which has just recently begun to expand. In Fall River and New Bedford operations at the present time are in the vicinity of 65 or 70 per cent of capacity, and orders for fine stuffs on the books are increasing. The Berkshire Fine Spinning Associates, controlling mills in various centers, have been more optimistic from week to week and currently report good business. Rhode Island and Connecticut mills are fairly well employed, while variable conditions prevail in the centers north of Boston, although generally speaking they are better than recently.

The Berkshire Fine Spinning Associates have been enlarging their scope, the most important instance of this being their taking over the sales of the Parker Mills of Fall River under date of January 6th. Taking over of sales followed upon a purchase offer for the Parker Mills stock and Parker and Hargraves bonds, acceptance of which had been recommended to the Parker stockholders by the directors. The offer was 7¾ shares of Berkshire 7 per cent cumulative convertible preferred of $100 par for each $1,000 face value Parker and Hargraves bond outstanding, 1¾ shares of Berkshire no par common and 1-10 share Berkshire preferred for each share Parker preferred, and ¼ share Berkshire common for each share of Parker common. On the announcement of Berkshire taking over Parker sales it was stated that Leonard S. Chace, treasurer of the Parker mills, would have charge of selling of Parker goods at the Berkshire's New York office.

If the proposed purchase goes through, Berkshire's annual output in cloth will be increased by 200,000,000 yards. Due to the probable need of 50,000 bales extra of cotton yearly Berkshire appointed Henry S. Newcombe of Providence, R. I., as raw cotton buyer for the corporation. Mr. Newcombe was a member of E. S. Macomber & Co., Providence cotton brokers, and is to co-operate with Charles J. Jones of Greenwood, Miss., assistant treasurer, in cotton purchases.

The Fall River mill situation has also improved with the settlement of the Bourne mill strike, which lasted for about 13 weeks. Weavers struck on account of the multiple loom system requiring weavers to operate 40 instead of 20 looms, and won their point, the mill having re-opened recently with about half its normal force on a 20-loom basis. Operative personnel will be gradually increased until the usual 500 are employed. The strike was of 124 weavers. Other Fall River textile enterprises have been proceeding satisfactorily particularly such plants as the King Philip and a few others which through careful management, sound merchandising, and a good product have been models for years.

The New Bedford fine goods mills have shown considerable improvement during the past few weeks. The amount of all-cotton as well as of rayon and silk fancies that the New Bedford mills have sold of late has run to very satisfactory proportions, and development of new cloths restricted to the purchaser has been beneficial. The vogue for sheerer all-cotton fabrics for dress goods has contributed to a better feeling and considerable business in such lines has been done with New Bedford mills and with other enterprises in New England.

The tire fabric industry has picked up somewhat of late. The year 1929 despite the recession of November and December was an outstanding one of this branch of the industry, and the market is now recovering from the slowness of the past two months. The Firestone, Goodyear and Fisk plants in New Bedford are reported in a stronger position.

The New Bedford Rayon Company, during 1929, supplied about 500,000 pounds of rayon to the New Bedford mills, whose total consumption of rayon yarns amounted to about 7,000,000 pounds. Plans of the New Bedford Rayon Co., call for production of about 2,000,000 pounds of rayon yarns this year, most of which it expects to market in New Bedford.

Twelve of the New Bedford cotton mill corporations paid dividends ranging from 1 to 24 per cent. during 1929, the Pierce Manufacturing corporation paying the latter. Latest statements of New Bedford mills showed net quick assets of $24,447,896. Spindleage in 1929 decreased 392,294 to 2,746,-562; looms decreased 567 to 57,676; employees decreased 571 to 30,079. Cash dividends of $1,069,790 were paid by New Bedford mills in 1929 as against $1,495,101 in 1928.

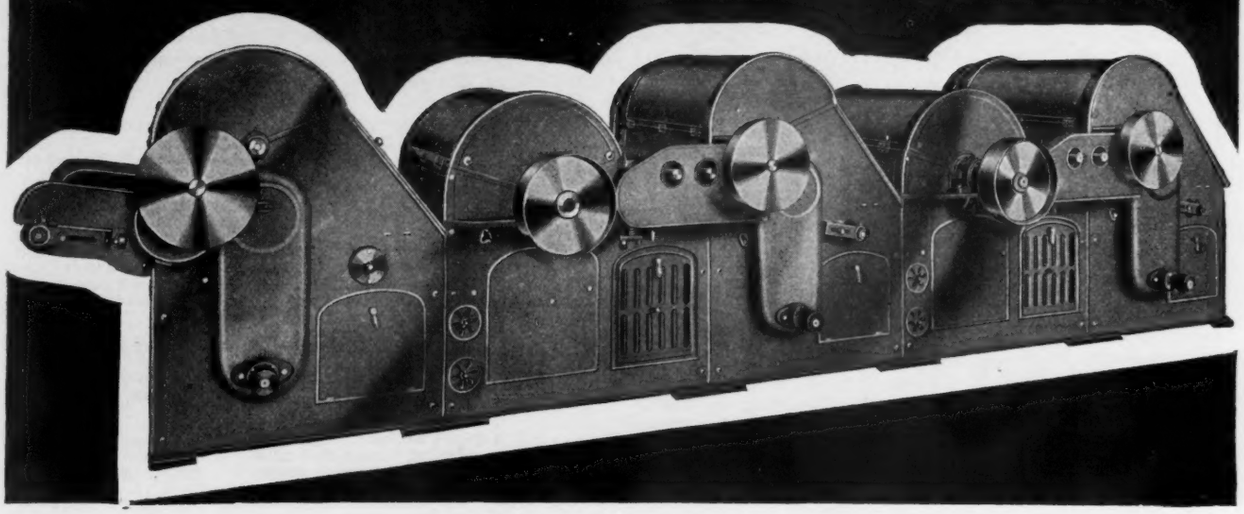
Directors of the Pilgrim Mills, Fall River, declared a quarterly dividend of $2 per share at the end of the year, the rate being the same as for the preceding quarter.

The Lonsdale Company's mills in Rhode Island which went into the December curtailment program strongly, closing down for the month, re-opened the first of the year. Mills in Rhode Island and Connecticut specializing in fine rayon goods were enjoying a better response. The Nyanza mills, yarn spinners of Woonsocket, R. I., recently brought out a series of original color combinations in their rayon yarns based on the new colors chosen by stylists for the coming season, and have enjoyed the desired response. Birge Manufacturing Co., underwear makers, of Bristol, Conn., reopened from a two weeks' shutdown with James F. Neilds, Jr., formerly of the Ware Valley Manufacturing Co., Ware, Mass., now in charge.

The Monument Mills of Housatonic, Mass., bedspread manufacturers, have recently brought out new bedspread lines. Considerable attention has also been given to blank-

NEW

H & B TANDEM 30" CYLINDER OPENING AND CLEANING UNIT



OUR new 30-in. Buckley Cylinder Opening and Cleaning unit can be supplied in Single, Double, or Triple Units, suitable for connection to Hopper Bale Openers, Crighton Openers or Independent Feeders. All Cylinder Sections are of the Buckley type, with extended grid bar surface and large dirt-receiving chamber.

The Cylinders are built up on a central shaft, with boiler plate steel discs. Steel blades are riveted to the periphery of the discs, and bent at varying angles so that the cotton across the whole width of the machine comes under the action of the Cylinder.

Grid bars are of the narrow type, adjustable to the class of cotton being run. The spacing and arrangement of these bars provides the most effective cleaning area of any known cotton-cleaning agency. The Cage Sections are of the Lattice Delivery type, with single Cage and Lattice Apron, ensuring an even distribution of cotton the full width of the machine.

All Fans are of the multi-vane type, with steel blades, and mounted on Heavy S. K. F. Ball Bearings.

Safety Beater Locking Devices, Adjustable Air Shutters, and Stands for motor or countershaft drive are part of the regular equipment.

H & B AMERICAN MACHINE CO.

PAWTUCKET, R. I.

Southern Office: 814 and 816 Atlanta Trust Co. Bldg., Atlanta, Ga.

BUILDERS OF COTTON PREPARATORY AND SPINNING MACHINERY

et manufacturing in the various enterprises in New England engaged in this trade as the result of the recent blanket openings in New York. Nashua Manufacturing Co., of Nashua, N. H., Lowell Mass., and Cordova, Ala., have reported considerable response from the openings.

Although the situation has improved a little in the cotton goods centers of Manchester, N. H., Lowell, Mass., and Lawrence, Mass., it has been without significant developments. The Amoskeag Manufacturing Co's. plant at Manchester is employing more, although on no better schedule than some southern New England enterprises. The Everett Mills, large gingham plant of former times at Lawrence, declared a dividend in liquidation of $15 per share through sale of remaining properties in Lawrence to Lawrence Factories, Inc., a firm of other than textile interests. Some unsold assets and a cash balance remain and there will be another dividend paid. Pacific Mills' Lawrence plant is doing more in rayon and cotton fancies.

The Hill Manufacturing Co., of Lewiston, Me., weavers of muslins, jeans, sheetings, and shirtings, have appointed Bliss Fabyan & Co., of Boston and New York as their sole selling agent effective from the first of the year. Hill Manufacturing started in business in 1855 as a cotton gray goods mill, was extremely prosperous, and paid regular dividends for 68 years, some having been as high as 32 per cent. In 1928 control passed into the hands of the Maine Central Power Co., which also owns the Bates, Androscoggin, and Edwards Mills, likewise represented by Bliss Fabyan. The company is being reorganized. "Hill Semper Idem" trade marked muslin is one of the best known products.

The Pepperell Manufacturing Company's Maine enterprises are reported steadily engaged. The company recently reaffirmed prices for two months of Lady Pepperell and Pepperell wide sheetings, sheets and pillowcases. The company also has a plant in Alabama and one in Georgia.

Sanford Mills, Sanford, Me., one of New England's consistently profitable plants, earned $3.58 per share for the year ended November 30, according to recent statement. Earnings for the year totalled $926,284, a falling off from $1,357,989 in 1928, $1,540,546 in 1927, and $1,507,107 in 1926.

Termination of the active career of the dry goods commission house of Lawrence & Co., the first of the year, which for many years has been identified with New England as well as Southern cotton mills, was of interest. John S. Lawrence of Boston, whose family was responsible for cotton manufacturing developments in Lawrence in the period from 1856 on, as well as in other centers, and Henry W. Howe, have given up dry goods interests with the passing of the company, and J. E. Rousmaniere has joined Minot Hooper & Co., in New York.

American Bemberg Corp. Holds Exhibit.

It was recently announced that buyers in New York during the month of January would have an opportunity of examining 15 denier Bemberg yarn under the microscope, in the American Bemberg Corporation offices, 180 Madison Ave. It was reported that the fineness of the product is indicated by figures showing that there are 4,227.5 miles of filament in one filament pound, and that the actual measurement of the 15 denier filament is 0.0004 of an inch as compared to 0.00023 of an inch—the measurement of the spider's filament.

The company pointed out that another interesting feature of the exhibit was to be a chart showing the different steps in the Bemberg stretch-spinning process, cotton seeds, unbleached cotton linters, bleached cotton linters and the cuprammonium spinning solution.

New Commercial Lighting Catalog.

Westinghouse Commercial Lighting is the title of Catalog 219-B, which has just been released by the Westinghouse Electric and Manufacturing Company, South Bend, Indiana. Copies of this catalog can be procured from any Westinghouse district office or from the advertising department in East Pittsburgh, Pa.

Cotton Comment by H. & B. Beer

New Orleans, January 18th, 1930.

COMPARED WITH one month ago values show no appreciable change. During the period spot sales weekly at reporting southern markets figured smaller than for corresponding weeks of last season; exports, spinners takings of American, and December domestic consumption were disappointingly small, while the world's visible of American, which, on December 13th, showed an excess over last season of 129,734 bales, yesterday showed an excess over one year ago of 259,129 bales. Sustaining features of the situation were trade buying, the comparatively lower prices than last year, the coming into being of the $30,000,000 American Cotton Cooperative Association, and the warning against overplanting this year.

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK DECEMBER STATISTICS.

Yards—	December 1929 4 weeks	November 1929 5 weeks	December 1928 4 weeks
Production	243,735,000	345,146,000	279,207,000
Sales	302,934,000	222,911,000	225,189,000
Shipments	214,148,000	276,377,000	276,098,000
Stocks	461,013,000	431,426,000	391,743,000
Unfilled orders	431,018,000	342,232,000	468,861,000

Sales were 124.3 per cent of production, shipments 88 per cent of production. Stocks increased 7 per cent, and unfilled orders increased 26 per cent.

BRITISH BOARD OF TRADE REPORT FOR DECEMBER

Year—	1929	1928	1927
Exports of cloths, yards	274,000,000	290,000,000	291,000,000
Exports of yarn, pounds	14,000,000	13,000,000	15,000,000

CENSUS REPORT

United States Bales—	This Season	Last Season
Consumption, including linters, December	506,436	592,044
Consumption, including linters, 5 months	3,106,893	3,127,327
Mill stocks, December 31st	1,844,248	1,733,930
Stocks in pub. stg. & comp., December 31st	5,914,422	5,236,722
Stocks in mills, in pub. stg. & comp., Dec. 31st	7,758,670	6,970,652
Active spindles during December	29,069,510	30,653,668

OTHER STATISTICS.

American Cotton— Bales—	This Season	Last Season
Total in sight (marketed) to January 17th	12,823,133	12,569,344
Exports from the United States to January 17th	4,702,873	5,277,992
Total mill takings to January 17th	8,303,000	8,863,000

WORLD'S VISIBLE SUPPLY

Bales—	This Year	Last Year
Total American	6,312,716	6,053,587
Of other kinds	2,354,000	2,029,000
Total of all kinds	8,666,716	8,082,587

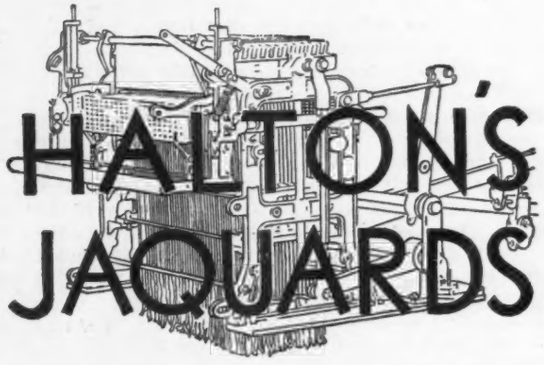
OFFICIAL ESTIMATES OF LEADING FOREIGN CROPS ISSUED SO FAR

Bales of 478 lbs. net—	This Season	Last Season
India	4,452,000	4,718,000
Egypt	1,641,920	1,628,000
Russia Asiatic	1,325,000	1,232,362

Recently New York advised: "National Fertilizer Association sales December 15.7 per cent under year ago. Four months 483,499 tons against 535,277 previous year."

In early January the Federal Farm Board was reported as having stated to the effect that it does not guarantee to lend 16 cents a pound on the 1930 cotton crop, and that it cannot protect farmers when they deliberately overplant, saying: "What the Board will do to help in marketing the next cotton crop will depend upon what farmers do at planting time. It was pointed out that nothing but crop failure in Texas in 1929 prevented a total yield of 16,000,000 bales in the belt, or more American cotton than the world would take at a fair price, and that the national acre yield to that of 1926 on the 1929 acreage would have produced 17,500,000 bales."

Subsequently Washington advised: "Chairman Legge, of the Farm Board, declared that cotton farmers throughout the South had given indications they would curtail their planting in view of the board's warning against overplanting. He said he believed this curtailment would be most effective in its benefit to the cotton producer. The entire South has responded enthusiastically to the board's suggestion for 1930 crop planting, and every agency throughout the South, including the agricultural extension colleges,

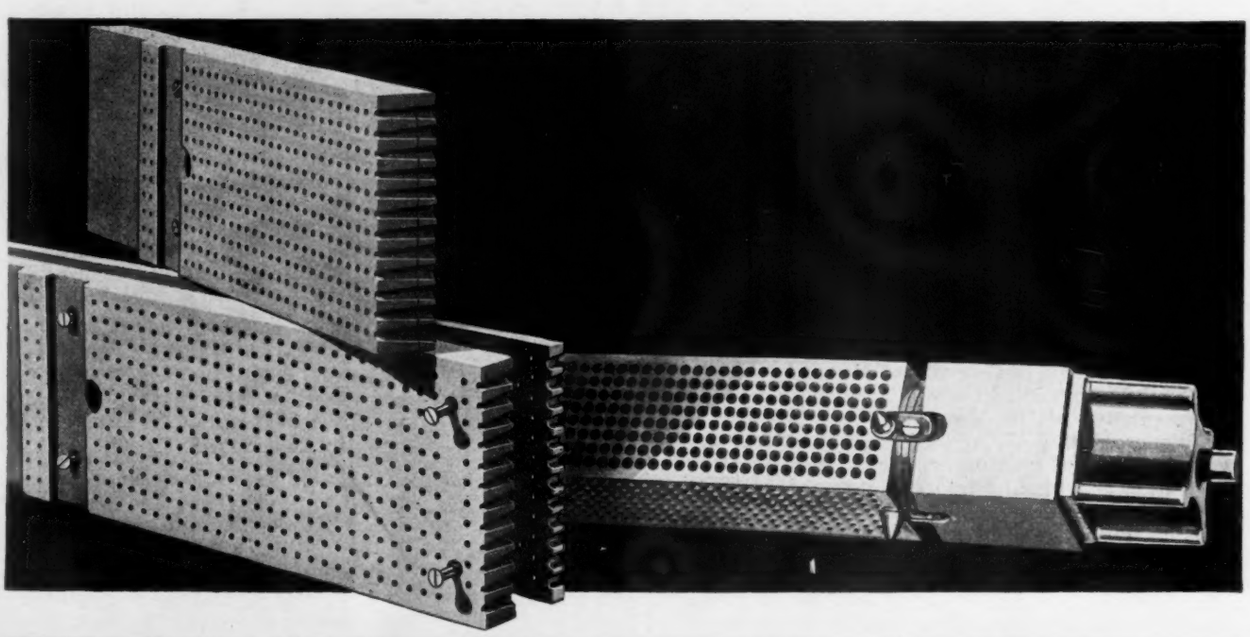


HALTON'S JAQUARDS

Needleboards are of solid, well seasoned mahogany—made in two parts to facilitate cleaning. Cylinders, too, are solid mahogany — partially hollowed and built up in sections. Mahogany assures a minimum of shrinkage and warpage.

Performance counts! Each part of Halton's Jaquards is constructed to give long lived performance. Our new catalogue explains how. Send for it. » » »

Thomas Halton's Sons,
"C" and Clearfield, Philadelphia
H. A. Forbes, Paterson, N. J.



would assist in the program, and business men are cooperating with the board to keep planting down and improve the quality of the 1930 crop. Mr. Legge emphasized that the acreage reduction campaign had just begun, and said that if farmers do not take the farm board's advice, they cannot expect protection from the farm board's policy in relation to next year's crop."

There has been much very cold weather in the cotton region so far this winter, with the most severe cold wave experienced thus far this season prevailing at this time, which undoubtedly will exterminate much of insect life, perhaps destroy many boll weevil. With this feature of the situation, and the good season in the ground, due to much rain, sleet and snow, it would seem that the South should take seriously the warning to reduce its acreage to cotton materially this year.

Under date of January 14, a weekly trade report stated in part: "Domestic mills probably did not sell as much cloth as they produced, in aggregate yardage for the entire industry, this past week. The belief is expressed in well informed quarters that an extension of drastic curtailment is needed to rectify the mill situation. The foreign mill situation continued very irregular, with operations still on a curtailed basis in the aggregate, and without any definite prospects of an increase or decrease in mill activity from the present rate."

For the four months ending with the close of November, Garside estimated the world's consumption of American cotton at 4,857,000 bales against 5,083,000 for corresponding period last season, linters not included.

Charles Piez Elected President A. S. M. E.

At the annual meeting of the American Society of Mechanical Engineers held in New York City on December 3rd, Charles Piez, chairman of the board, Link-Belt Company, Chicago, began his term as president of the association—the largest engineering organization in the world. Mr. Piez is widely known as an engineer, a manufacturer and an executive.

Cooper Hewitt Now Known as General Electric Vapor Lamp Co.

It was recently announced that on and after January 1, 1930, the Cooper Hewitt Electric Company will be known as the General Electric Vapor Lamp Company. It was stated that the trade mark Cooper Hewitt heretofore used will be retained as the trade designation of the products manufactured by the General Electric Vapor Lamp Company.

Kaumagraph Appoints Chattanooga Representative.

Kaumagraph Company, New York City, manufacturers of Kaumagraph Trademark Transfers, Kaumagraph Lithography and Kaumagraph Embossed Seals, has placed D. C. Blevins in charge of the Chattanooga district. He will have his offices in the Provident Bldg., and will render personal service on matters of trademarking and lithographing to mills and jobbers in that locality.

Ramsey Chain Company Transfers Atlanta Warehouse.

The Ramsey Chain Company have transferred their warehouse stock to the Bailey-Burruss Manufacturing Company, 1116 Murphy Avenue, S. W., Atlanta, Ga., and W. H. Davis, manager, is now associated with the Bailey-Burruss organization.

T. B. Wood's Sons Distributors for Texrope.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., announce the appointment of T. B. Wood's Sons Co., Chambersburg, Pa., as special distributors for Texrope drives. The Wood's company will carry a large stock of Texrope drives as well as Texrope belts at Chambersburg.

Aluminum Co. of America Makes an Announcement.

A recent announcement states that the southeastern district sales office of Aluminum Company of America is permanently located at 1818 Rhodes-Haverty Building, Atlanta, Ga.

Additional Notes About Men You Know or Know About

(See also page 408.)

G. H. Mahaffee has been promoted from assistant superintendent to superintendent of the Louisville Cotton Mills, Louisville, Ky. He is a graduate of the Textile School of North Carolina State College.

D. F. Barnes, formerly overseer of spinning at Richland Mills, Columbia, S. C., is now overseer of spinning at the Mollohon Mills, of Kendall Mills, Inc., at Newberry, S. C.

J. P. Holmes, who for the past two years has been with the Celanese Corporation of America at Charlotte, N. C., has been appointed Chicago representative. Mr. Holmes is a graduate of the Georgia School of Technology, Atlanta, Ga.

John F. Kinney, of Greensboro, N. C., has been appointed the southern representative of the Nyanza Mills of Woonsocket, R. I., selling their complete lines of spun rayon, worsted, cotton and rayon mixtures. He will be a direct representative of the mill, operating out of the Philadelphia office located in the Lafayette Building, under the direction of E. W. Martin.

T. T. Lucas has recently been elected president of the Pinehurst Silk Mills, Hemp, N. C. Mr. Lucas, who is a graduate of the Textile School of North Carolina State College, was formerly connected with Wellington, Sears & Company, New York, having entered that organization just after graduating from the Textile School.

John W. Glenn, formerly with the Glenn Commission Company, Richmond, Va., and Greensboro, N. C., has become associated as sales representative with the Green River Manufacturing Company, Tuexedo, N. C., spinners and mercerizers of fine combed yarns in counts from 30s to 120s single mercerized, and from 70s to 120s single natural, and two ply natural and mercerized from 80s to 120s.

J. C. Cosby is in charge of the new office in Greenville, S. C., recently opened by the Ciba Company. He is a graduate of the Textile School of North Carolina State College.

C. J. Tarrant has resigned as superintendent of the Issaqueena Mills, Central, S. C.

Floyd M. Tidwell has resigned his position as general overseer of carding and spinning at the Judson Mills, Greenville, S. C.

J. B. Williams, who for the past 14 years has been connected with the Augusta Factory, Augusta, Ga., serving as superintendent for the past six years, recently resigned.

Ralph Ramseur, who until recently has been secretary of the Issaqueena Mills at Central, S. C., and the Courtenay Manufacturing Company, Newry, S. C., is now president of both companies.

J. S. Stinnett, who has been with the Consolidated Textile Corporation, Bonham, Texas as overseer of carding, recently resigned to accept a similar position with the Sherman Manufacturing Company, Sherman, Texas.

J. W. Wood, who until recently has been superintendent of the Gossett Mills, Pendleton, S. C., has been transferred to a similar position at the Riverside plant of the same company in Anderson, S. C.

Gordon Spencer was recently promoted to production manager of the bleaching department of the Rock Hill Printing and Finishing Company, Rock Hill, S. C.

B. C. Mofatt has been appointed personnel manager at the Rock Hill Printing and Finishing Company, Rock Hill, S. C.

THERE'S POWER IN THESE OILS

It's the power of lessened friction. Texaco Spindle Oils are showing truly remarkable results in many of the country's largest mills. The saving amounts to hundreds of thousands annually for the industry.

The Texas Company has for years been interested in spinning room power economy. Exhaustive tests have been made, and are being made every year, on spindle oils and their influence on power consumption. These tests show conclusively that Texaco Spindle Oils in the average mill with the average care in lubrication save substantial amounts.

The results of these special studies of textile plant lubrication are freely available on request. Or, if you prefer, Texaco Engineers will gladly arrange a demonstration on one or more of your own frames. Write The Texas Company.

TEXACO

REG. U.S. PAT. OFF.

TEXACO LUBRICANTS

THE TEXAS COMPANY, 17 BATTERY PLACE, NEW YORK CITY

THERE IS A TEXACO LUBRICANT FOR EVERY PURPOSE

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

J. C. MARTIN,

who last month became southern representative of the H. & B. American Machine Co., with headquarters in the Atlanta Trust Co. Bldg., Atlanta, Ga. Mr. Martin, whose appointment as southern representative followed the retirement of E. Chappell from this position, has been associated with the company at the Pawtucket headquarters for a number of years.

Robert D. Harvey has been made superintendent of the Lindale plant of the Pepperell Manufacturing Company at Lindale, Ga., succeeding **W. A. Marshall**, who is now assistant agent. Mr. Harvey has been assistant superintendent for some years. Previous to his connection at Lindale, he was associated with the Aragon Mills, Aragon, Ga., where he went following his graduation in the textile department at the Georgia School of Technology, Atlanta.

W. N. Randle has become superintendent of the Moultrie Cotton Mills, Moultrie, Ga. A number of years ago, Mr. Randle was director of the Textile School at the Georgia School of Technology in Atlanta.

H. B. Le Feaux has resigned his position with the Morganton Full-Fashioned Hosiery Company, Morganton, N. C., and is now assistant superintendent of the knitting room at the Arrowhead Fashion Mills, Rossville, Ga.

H. H. Holcombe has resigned as vice-president and general manager of the Strowd-Holcombe Cotton Mill, Inc., Birmingham, Ala., to devote his time to the Holcombe bunch builder and other interests.

R. C. Anderson, who has been connected with the Nick-a-Jack Hosiery Mills, Chattanooga, Tenn., for about ten years, recently resigned the position of superintendent of that plant to become associated with the Carolina Dyeing and Winding Company, Inc., Mount Holly, N. C., of which Edwin F. James is president. Mr. Anderson is an experienced designer of novelty half-hose, as well as being familiar with yarn, knitting, dyeing, etc., and will handle the newly organized development service of the Carolina Dyeing and Winding Company, his services being available to that concern's clients.

Harold J. Ivens, formerly assistant manager of Turner Halsey Commission Merchants, of New Orleans, recently received the promotion to manager of the Western division, with headquarters in Kansas City. Mr. Ivens is a graduate of the Georgia School of Technology, Atlanta, Ga., having graduated with the class of '19.

J. H. Belknap was recently appointed to the position of manager of control engineering department of the Westinghouse Electric and Manufacturing Company at East Pittsburgh. He succeeds E. B. Newill, who resigned to become assistant to the president of the Delco Products Company, a subsidiary of General Motors Corporation.

C. R. Hall has accepted a position as weaving technician with the American Enka Corporation, Asheville, N. C. Mr. Hall, who is a graduate of the Textile School of North Carolina State College, was for several years designer for the Highland Park Manufacturing Company, Charlotte, N. C.

James Oates has become general superintendent of the Cherry Cotton Mills, Florence, Ala. Mr. Oates was recently connected with the Morgan-Werthan-Hamilton Bag Company of Nashville, Tenn., at the Warioto Cotton Mills.

Arthur S. Jarrett, formerly with the Charles Mill Company, Red Springs, N. C., has recently returned to that company in the position of night superintendent.

Frederick W. Holt has resigned as overseer of weaving and designing at the Bourne Mills, Fall River, Mass. Previous to this connection he was overseer of weaving at Wamsutta Mills, New Bedford, Mass.

Gordon A. Johnstone recently accepted the position of superintendent at the Priscilla Spinning Company, Ranlo, N. C.

Carl R. Harris has resigned his position as superintendent of the Erwin Mills at Cooleemee, N. C., to become resident general superintendent of the Aragon-Baldwin Mills, with plants at at Chester, Rock Hill, and Whitmire, S. C. He will establish his home at Chester.

Mr. Harris, a graduate of the Textile School of North Carolina State College, is one of the best known textile men in the South. During 1928-29 he served with distinction as President of the Southern Textile Association. For many years he has been chairman of the spinner's section of this association.

R. G. Emery, general manager of Dunean Mills, Greenville, S. C., and Watts Mill, Laurens, S. C., will, in addition, be general manager of the Aragon-Baldwin properties.

A. B. Brannon, superintendent of the Entwistle Manufacturing Company, Rockingham, N. C., and general superintendent of the Roberdel Mills, which mills were recently purchased by the Entwistle Manufacturing Company, recently was the honor guest of a dinner tendered by Mrs. Brannon. Overseers in the Entwistle Mills and other guests were present, and presented Mr. Brannon with a beautiful Cogswell chair and smoking stand.

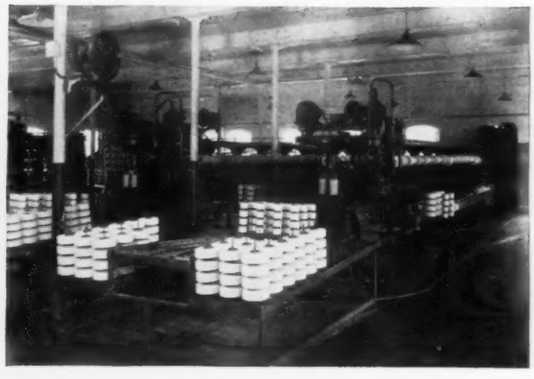
H. E. Harden has resigned as overseer of night spinning at the Shelbyville Mills, Shelbyville, Tenn., to become overseer of twisting and winding at the Atlantic Cotton Mills, Macon, Ga.

W. C. Bobo, who resigned as manager of Judson Mills, Greenville, S. C., on January 1st, was tendered a banquet by his friends at Judson and was presented with a handsome chest of silver as a token of the esteem in which he is held by his associates at Judson.

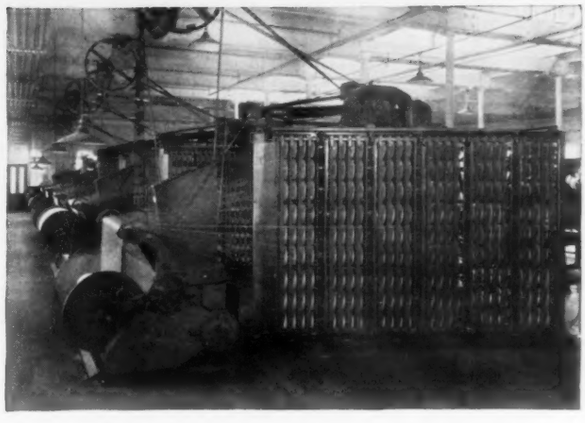
W. T. Morton, formerly overseer of spinning at the Mollohon Mills of Kendall Mills, Inc., Newberry, S. C., is now overseer of spinning at the Martel Mills, of Batesburg, S. C.

T. C. Ramsey, formerly overseer of the cloth room at the Louise Cotton Mill, Charlotte, N. C., is now overseer of the cloth room at the Hermitage Mill, Camden, S. C.

"EVERY KNOT A WEAVER'S KNOT"



ABOVE. The Spoolers in this mill are arranged in two groups with a wide aisle between, toward which the trident tables roll the tridents loaded with filled cheeses. The pictures show the two groups on either side of the aisle.



AT THE LEFT. Looking along the line of warpers. Their location in relation to the Spoolers can be seen from the pictures above. With this arrangement it is convenient to transfer the full cheeses quickly to the proper creel.

FISK

of Pawtucket, R. I.

IS A SATISFIED USER OF BARBER-COLMAN SPOOLERS AND WARPERS

THIS New England mill is successfully making cord fabric for high grade pneumatic tires. As an important part of their processing machinery they have installed Barber-Colman Automatic Spoolers and High Speed Warpers and are well satisfied with their performance. It is gratifying to us to be able to pass this information along.

BARBER-COLMAN COMPANY

General Offices and Plant

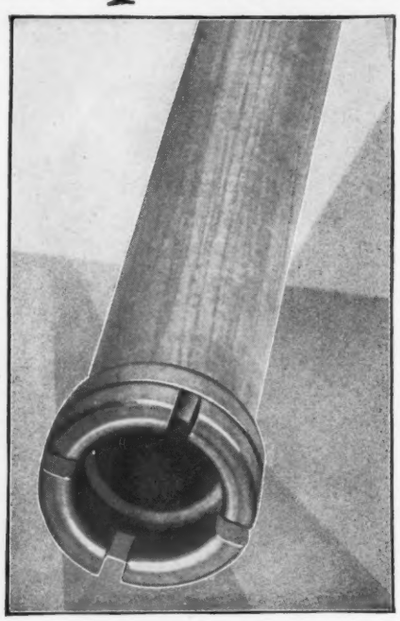
ROCKFORD, ILLINOIS

GREENVILLE, S. C. FRAMINGHAM, MASS.

FINISH GUARANTEED

U S HARDWEAR *Finish gives new durability to U S products*

THE *U S HardWear Finish* gives a new standard of durability to U S Quality Products. The new finish, ... for U S Products, impregnates the wood fibres and binds them firmly together. It insures a uniformly tough, durable surface that will not mar readily, and thus lengthens the life of U S Products under operating mill conditions.



Number 51 *Fifty-one*

Specified for U S Card Room Bobbins

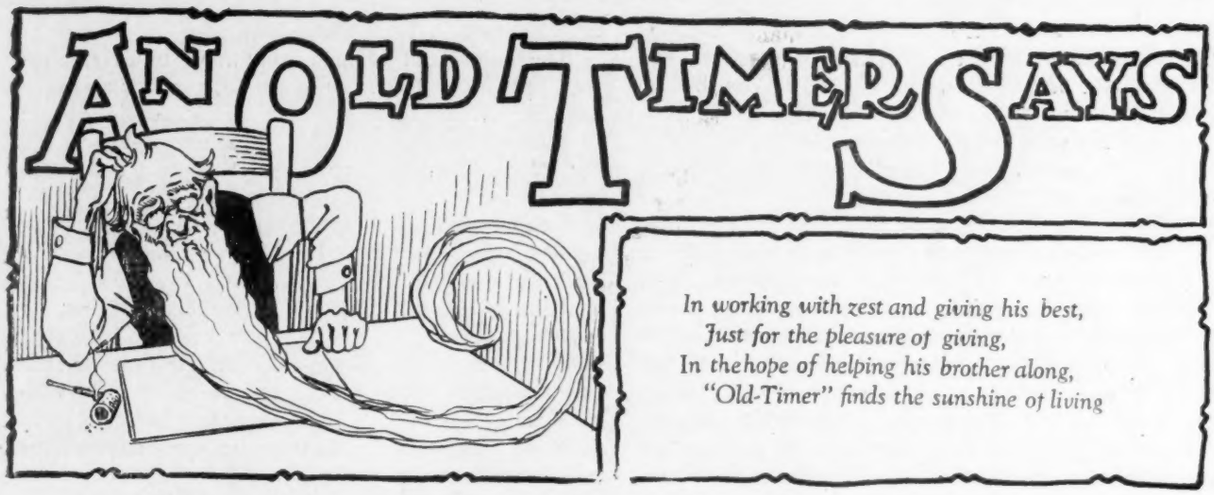
U S HardWear Finish No. 51, *applied specifically to U S Card Room Bobbins,* gives a smooth, wear-resistant surface, and the finish of the hole definitely minimizes the collection of lint under operating conditions. It insures service-satisfaction of U S Card Room Bobbins under any temperature up to 100° Fahrenheit and 100% relative humidity.

Founded in 1857

U S BOBBIN & SHUTTLE COMPANY

MANCHESTER, N.H. *EASTERN DIVISION*
MANCHESTER, N.H. ~ GOFFSTOWN, N.H.
LAWRENCE, MASS.
WILLOUGHBY, VT. ~ PHILADELPHIA, PA.

MONTICELLO, GA. *JORDAN DIVISION*
GREENVILLE, S.C.
MONTICELLO, GA. DUBLIN, GA.
JOHNSON CITY, TENN.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living

"Jack" Pinch-hitting for "Old-Timer"

"An old man going along a highway,
Came at the evening, cold and gray,
To a chasm, vast and deep and wide
Through which was flowing a sullen tide;
The old man crossed in the twilight dim,
The sullen stream had no fear for him;
But he turned when safe on the other side,
And built a bridge to span the tide.
" 'Old man,' said a fellow pilgrim near,
'You are wasting strength with building here,
Your journey will end with the ending day;
You never again will pass this way.
Why build you the bridge at eventide?'
"The builder lifted his old gray head;
'Good friend, in the path I've come,' he said,
'There followeth after me today,
A youth whose feet must pass this way,
This chasm that has been naught to me,
To that fair-haired youth may a pitfall be;
He, too, must cross in the twilight dim,
Good friend, I'm building the bridge for him'."

—Rev. C. G. Wiley.

KIND READER, can you think of anything more typical of the work "OLD-TIMER" is doing for us? He has crossed over the chasm and knows its pitfalls. So far as he, himself, is concerned, he could pursue his journey on, but instead he has paused at eventide and is building a bridge for us.

He is not satisfied to leave the road as he found it, and I feel sure that among his most lofty ambitions, one is to look back and see men following in the road he has passed. He will then know and realize that his labors have not been in vain.

Now if we reach the other side of this vast and deep chasm we must surely cross on "OLD TIMER'S" bridge; cross on the sound principles he is constantly laying before us. If we go around them we will most surely land in a pitfall.

How are we going to approach his bridge? Now that calls for more talk.

Gentlemen, when we start to studying industrial management, one of the first things we learn is, that if we do not apply the principles we learn, then we are wasting time and had better just get a truck-driving job and settle down to our fate.

"OLD TIMER" is giving us one of the best industrial management courses that money can buy. Are you getting out of it what you should? Who is benefited by "OLD TIMER'S" advice? Well, I'll tell you of one class of men that is not benefited by it. That is, the men that will read "OLD TIMER" and then say: "Gosh, don't pour it on So and So. Wonder if our boss spinner has read this? I'm going to slip around and mention it to him and see what he says."

Now you guys, every one of you, "OLD TIMER" is not writing these articles just for your entertainment, and to act that way is just as silly as laughing at the serious act in a show. You know what you would like to do to a guy that does that.

Of course you turn to "OLD TIMER'S" page and read that the first thing—which is the proper thing to do—but I want to ask you, with all candidness, to please turn back and read some of them again now and take stock of yourself and see if you can't get a different viewpoint on it. Something that will really be of help to you instead of mere entertainment.

I am sure that if "OLD TIMER" thought that entertainment was all that he was furnishing, then he would never write another scratch.

Now I want to mention an instance of a few years back. A manufacturing industry was lagging along and got in a bad way, and an efficiency expert was called in, and after making his investigations he of-

WE SHOWED this article in manuscript to OLD-TIMER, and he said, "Say, use that on the OLD-TIMER page some time. That fellow expressed my thoughts exactly. Anyhow, it will give me a vacation, and will provide the readers with another man's angle."

So it is that the teacher has given up his chair this month to one of the pupils, and, in the language of a diminutive radio performer: "Here 'tis." What do you think of it?

EDITOR COTTON.

fered suggestions to the manager in charge. The manager admitted that most all of these suggestions had been thought of and discussed months before, but he didn't think that they amounted to much, so let them pass by. He was looking forward to some streak of magic from the efficiency expert's advice and was disappointed at not learning anything new.

We learn something from that, and that is, that the most useless thing in the world is an idea which is never put to work. If you have an idea, put it to work for you. If you have no idea, then by all means get one. They are running around all over the place just waiting for somebody to grab them and put them to work, and when you get one it is yours. When you catch one, look it over good. Familiarize yourself thoroughly with it so that you can give it a proper presentation. Don't say "If we had a whim-wham with a do-daddle on it to attach to our machine we would get better results." Make yourself clear. Don't say, "I believe if we could manage some way to do so-and-so without causing so-and-so the results would be thus-and-so!"

Everybody knows that if you can get more from the machines and reduce costs and not run everybody off, you would have the desired results. But how are you to do this? You must thrash out a few thoughts; get hold of an idea and work it over thoroughly. Bring out all the details from one end to the other, both pro and con. Satisfy it so it will stand any bombardment of questioning. Then you have a presentable idea, and one that is ready to go to work for you.

You must have the right kind of confidence in yourself, and if you know a thing is right, then stay behind it and push, but push right. Sometimes it is hard to put an idea into operation, but if you know it is practical, then by all means find a way to put it over.

Sometimes your immediate superior will be a little shaky or afraid of your ideas and will not lend you his cooperation. When that is the case and you know you are right, then take the matter up with the next highest executive. They may run you off, but if they do—what of it? You had better be somewhere else any way than to be tied up with men that will run you off for "trying" to do something.

Now I know we have all been taught never to step over our superiors in any matter whatsoever, and we have been taught to fire a man that did so, but let me tell you, I believe if more "superiors" had been stepped over, cotton milling would not be in the rut it is in today.

Who knows how many men, both capable and responsible, have turned away from cotton milling and entered some other line of work and made good, just because they saw that it was no use to go on further; saw that they would lose their job anyway if they did? Did you ever see an overseer get mad when he saw one of his section men or second hands talking to the superintendent, even questioning them as to what they were talking about? Do you do that way yourself? If so, I am talking to you, and you ought to be stepped over—right on the neck, too.

A man should not be so small as to do that. He should live open and above board so that he will not have occasion to be so suspicious.

The right kind of men don't have to be stepped over, but they will give room for suggestions and help catch those loose ideas.

You can visit some mills and the overseers will tell you, "*I* did this. *I* stopped that." Now I had much rather have a job where *I* didn't have so much to do. It reflects much more credit on a man to be able to say something like this: "I believe we have one among the best organizations you will find anywhere. Our men are not afraid to offer a suggestion. In fact, we encourage them to do so. We have a section man over there who is really responsible for our present full-time operation, as he took it upon himself to investigate the causes of loom stoppages, and he came to us with the facts and the figures and some suggestions which increased our production so much that our costs automatically came down where we could pull through. We have another loom fixer there whose hobby is good quality, and through his suggestions and efforts we never have an order turned down on account of bad quality. And you see that fellow over there with the white shirt on? He is a loom fixer too, and you can charge the clean appearance of our room to him. He planned out a system for us that makes it possible to keep everything in ship shape all the time. Look at that fellow over there showing that young fellow that old shuttle. He is telling him what wore that shuttle out. Fortunately for us, he specializes in conserving supplies, and, the other boys all go to him for advice along that line and he always has time to give it."

Suppose you were to visit a place like that. You would see contentment in every worker's face. You would see things running tip top. You would be reluctant about departing and you would not leave with a contemptible feeling towards the overseer, but would say, "There is an extraordinary man; a man able to build about him an organization like that is a valuable man, and the sky is his limit."

That kind of an organization is entirely possible, and will be the result of *ideas put to work.* If you do not listen to a man's suggestions—I mean of course, sensible suggestions—you might as well run him off, for he will lose confidence in you and himself also and lie down on his job and never show his real worth, because he feels that it isn't appreciated. Can you blame him?

Let every man feel like he is helping to make a success of your job, and really see that every man does help by showing your appreciation of his efforts and thus secure his most earnest cooperation. Are you the kind of a man that some men will not let their wives and sisters work for? Well, I didn't know. You know some overseers are handicapped that way.

Some of the foregoing is just a little off the subject, but still on the road to "OLD TIMER'S" bridge, so just let it all soak in. It won't hurt you.

You say your job is running tip-top in every way and you can't find any place where "OLD TIMER" is talking to you? You say that being the case you have a perfect right to laugh at the fellow "OLD TIMER" is chunking? Watch your step, brother; you are traveling on dangerous ground.

A whale, 70 feet long, was chasing a school of red

fish down here in the Gulf of Mexico the other day and ran aground and was captured. No doubt the whale felt perfectly secure in pursuing his regular routine of living, and he evidently had up some good speed, but he happened to be headed the wrong way. No matter how big you are or how big your job is, if you are not always on the alert, you can expect—well, most anything to happen.

You must learn the most important thing about your job and then specialize on that.

Some years ago a traveling man stuck his head out from a car window and asked the car inspector—"What is the most important thing about your job?" The car inspector hesitated, and the traveling man told him *to think it over.* The question and the command put the inspector to thinking. There had been no complaint about his service. He felt sure he was delivering all that was required of him, but he kept turning the question over in his mind, and, finally decided that the most important thing for him to do was to get the trains out on the road again in the quickest possible time and he found a way to do it quicker, and today is a railroad superintendent. He attributes his success to that one question from the stranger—"What is the most important thing about your job? Think it over."

Now "OLD TIMER," or any other man, cannot put his finger down on every little thing for you to do to attain personal success. You will have to *think it over* for yourself.

I worked for a man once who went to his boss spinner with a request for a certain job to be done. The spinner asked, "How do you want it done, this way or that?" The superintendent replied, "It don't make any difference; either way will be wrong." So the spinner *thought it over* and delivered the job the right way, and was a better man than he would have been had the superintendent gone into detail with him about the job.

You know some of the most healthy men we have today take periodical physical examinations. This same rule of preserving good health will apply to keeping a good job running good.

When you get sick you call in the physician, and the first thing he does is to try and find out what is the cause of your ailment. If he locates the source of trouble and applies the remedy, you will improve. If he fails, and gives you the wrong remedy, you get worse and call another doctor. The same principle applies to your job. If it gets in a bad way you must locate the source of trouble and apply your remedy.

If you diagnose it wrong and apply the wrong remed, it gets worse, and you are *fired.* You must know the why of these things. You know the man who knows *how* will always have a job, but the man who knows *why* will be his boss.

So my advice is for you to start right in now and take your periodical examination from "OLD TIMER." It will stave off many ailments of your job if you will just apply the principles to your own self and your own job.

Now in conclusion, I want to tell you the story about the Indian who got full of "hooch" and bought a new automobile and started out to make "heap big whoopee" and landed in the river. He came back very much bedraggled, and his explanation was that he saw a bridge coming to meet him and he pulled out of the road to let the bridge go by, and his car ran off into the river.

Moral: Don't get so full of the hooch of self conceit that you will attempt to pull out and go around "OLD TIMER'S" bridge. If you do, you are going to get 'all wet".

JACK (TEXAS).

Dear Reader: Won't you write to me if you enjoyed this article by "Jack," and let me know whether you would like to see another one by him soon? Thanks.—Old-Timer.

Lustering by Calender Finish.

(*Continued from page* 394.)

lution would be injurious to the cotton. After the action of the caustic soda is finished, the printing paste is washed off and the goods are scoured by treatment with a dilute solution of sulphuric acid, and washed. As the mercerized fibers in this case are not maintained under tension, there will not be any luster developed, but as the object of the process is to cause the cloth to shrink in pattern effect, the question of luster does not enter into the case.

Other methods of creping may also be employed, such as for example, that of first printing on a paste containing a substance capable of acting as a resist against the action of the caustic soda. Neutral protective materials such as China-clay, or acid-bearing substances such as alum, may be used, and under such conditions, by treating the printed cloth with a mercerizing solution of caustic soda only these parts that are not protected by the printing will be mercerized, and will shrink, leaving the other parts in their natural condition after the paste has been washed off.

By printing with a resist paste and then mercerizing under tension, it is possible to obtain a fabric that is mercerized and lustered in pattern effects on an unmercerized and lusterless background, giving rise to a damask effect. If cotton is treated with a soap-solution and then with dilute acetic acid, or formic acid, and dried without washing out the excess of acid, the fiber will be found to have acquired a silk-like "scroop." If other acids, and especially mineral acids, are employed for washing, a subsequent rinsing with fresh water and soaping is necessary for the purpose of neutralizing all of the acid, which otherwise would seriously tender the goods in drying, unless the amount of acid employed is so accurately adjusted as not to leave any free acid in the goods.

Mercerized cotton goods that have been dyed with vat colors and sulphur, then treated with soap and acid baths in order to impart "scroop," are liable to tender. A "scroop" may also be added to mercerized yarn as follows:

The yarn is soaped in a lukewarm (120 degrees F.) bath containing eight per cent of olive oil soap and one per cent of starch in the weight of the yarn, then extracted and treated for ten minutes in a bath containing 17 grams of lactic acid and seven grams of soda ash per liter for 20 minutes, hydro extract and dry without washing.

Develop Technique

Just as much depends upon it in Business as in Art or Sport

Technique in Business is that skilled and refined procedure which harmonizes mind with method and motion. Business that has it—individuals that have it—accomplish more, and do better work with less effort, less time and less waste.

Not long ago Business shied at the use of a term, or a practice, which had anything to do with Art—or even Sport. Not so now.

Modern Accountancy has shown not only that Modern Business *is an art,* but that its great advance is due to its recognition, and its application, of exactly the same factors and methods which have produced great Art—and made Sport so universal and so interesting.

In the control of your business—in the method or system of your management—in the endless operations of all material functions—*develop technique.*

ERNST & ERNST

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NEW YORK	RICHMOND	DETROIT	CLEVELAND	CINCINNATI	CHICAGO	INDIANAPOLIS	ST. LOUIS
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WASHINGTON	ERIE	BIRMINGHAM				WACO	SEATTLE

CARDING

Essentially a textile mill process, the carding principle is used by the Murray-Hancock system of preparation, for the first time in textile history, to arrange the fibres before the seed is even removed. Seed removal, then, does not tear the fibre, and the cleaned fibre is in shape, at once, for the picker.

Preparation that makes use of the carding principle furnishes the fibre:

With the least damage done to it.
With fibres combed out
and
Insures the fibre for the later mill processes.

COTTON GINNING AND COTTON SEED OIL MILL MACHINERY
DALLAS, TEXAS MEMPHIS, TENN. ATLANTA, GEORGIA

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Wants Proper Speeds for Jacquard Looms.

EDITOR COTTON:

I would like to get some information as to the best practical speed for a 12/4 or 108-inch Model O Draper loom, with a single cylinder, single lift, rise and fall Jacquard machine attached to it. I would like also, to have this same information on a 12/4 or 108-inch Crompton & Knowles pick and pick loom, with a single cylinder, single lift, rise and fall Jacquard machine attached.

Both looms are making medium and heavy weight goods. We are running these looms 88 picks per minute with good results, and have 24 and 28 looms to the section for the fixers. I would like to have the opinions of other readers experienced on these looms as to whether a higher speed is being used with good results.

C. S. (N. C.)

Some Points on Card Grinding.

Any reader with a different method of card grinding is invited to describe it in this department.

EDITOR COTTON:

I have been intending for some time to write a letter for the "HOW OTHER MEN MANAGE" department on the subject of card grinding, and will give you herewith my views on this subject, trusting that my remarks may help some fellow along through the tough places.

The first thing after the card has been stripped, is to remove all of the fly waste from underneath the card, and then from around the arches. Next put on the belt that is to run the doffer during the grinding operation, and reverse the driving belt on the cylinder and start up the card; however, the doffer should be backed off from the cylinder to a full gauge, so there will be no chance of its coming in contact with the cylinder during the operation of grinding.

The next step is to take a card brush, that is about 18 inches long and made for this purpose, and brush out both the doffer and the cylinder by holding the brush tightly against the wire clothing, taking pains that the brush does not "get away".

After these preliminaries, the card is ready for the traverse rolls, and should be stopped. The traverse rolls should certainly be kept covered with good fillet, covering them, say, with every 8 or 10 cards ground. Then the grinding hands should be put on, and the cards given a good oiling. This brings us to the actual operation of grinding.

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

According to my experience and methods, the rollers should be set in the following manner: Pull down one end a little, and then pull down the other end a little, keeping this up until the roller is striking a little fire every now and then from one side of the card to the other. The roller should finally be set so that the sparks will be even all the way across the card. When the rolls are once set, they should never be pulled down deeper unless new clothing is being ground. In such a case, the rolls must be pulled down a little every now and then.

Now as to how long the traverse rolls should remain on the card, this depends altogether upon the condition of the wire, and how dull it is, etc., but as a rule, from seven to ten hours is long enough.

As to which is the best setting to use, I will not try to give advice upon this point, as it depends upon the class of goods, the stock, the length of the staple of the cotton, whether it is white or colored, etc. However, I will say that a good setting for one-inch Middling white cotton would be as follows: I would set the top flats all to a 9/1000 gauge, the doffer to a 7/1000 gauge, the licker-in to a 10/1000 gauge, the feed plate to a 12/1000 gauge, the motes knives to a 10/1000 gauge, the cylinder screen to a 32/1000 gauge at the back and middle and to the button of the gauge or ¼-inch at the front. The stripping plates are seldom moved when placed in position by the erector. I would set the doffer and top flat comb to a 10/1000 gauge, and have the doffer comb set so the web will sag just a little.

If good new emery fillet is kept on the rolls, and the foregoing suggestions are carried out, it has been my experience that pretty fair carding will be secured.

I realize that this is a subject involving a lot of different opinions on the part of different men working under different conditions, but I believe a further discussion of it would be interesting and helpful, and I trust that some of the other readers of the "HOW OTHER MEN MANAGE" department will comment upon my suggestions and give their ideas on the subjects of grinding and card settings under different conditions.

C. R. D. (N. C.)

INDO CARBON CL conc.
INDO CARBON CLG conc.

THESE blacks are members of a special new group of sulphide blacks which possess the advantage over the ordinary sulphide blacks of producing shades of *excellent fastness to prolonged storing, hot steaming, ironing and acid cross-dyeing.*

The dyeings of Indo Carbon CL Conc. and CLG Conc. are *very fast to washing, boiling, ironing, stoving, alkalies, and mercerizing.*

The good *fastness to chlorine,* in which they surpass all other sulphide blacks, deserves special mention. As a result, Indo Carbon CL Conc. and CLG Conc. may be used for dyeing goods required to stand bleaching in the piece, provided due care is exercised in the method of working.

Vat Color Fastness

GDC

GENERAL DYESTUFF CORPORATION

Sole Distributors in the U. S. A. of the dyestuffs manufactured by
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BOSTON PROVIDENCE PHILADELPHIA CHARLOTTE CHICAGO SAN FRANCISCO

Replies to Question on Slubbers.

Some further opinions on what causes a slubber to run tight and then slack. Additional discussion on the subject will be welcomed.

EDITOR COTTON:

As an answer to the question submitted by "V. T. (GA.)" in the November issue of COTTON concerning slack ends on his slubber at the beginning of the set, I would like to submit the following article for his benefit. I really do not think he gave enough information on his trouble, so I am just going to shoot some questions and suggestions at "V. T." with the hope of hitting his trouble. To me, my suggestions as remedies seem very simple, but "V. T." may have overlooked one of which he will be reminded by this article.

"V. T.," how about your bobbins? Are they of the correct diameter for the starting position of the cone belt? Have you tried starting your cone belt closer to the end of the cones? If you have not tried this you are probably getting a soft wound bobbin at the start of the set, due to the bobbins not running fast enough, which will increase in diameter at a faster rate, thus bringing the bobbins gradually to the correct diameter during the first part of the set to take up this slackness in the ends. If you have not tried this, my advice is to take a shot at it. If it does not do the work you want it to, there is only one thing, if I understand the matter correctly, that it can do, and that is, cause your ends to be tight enough at the beginning but too tight at the end of the set.

Have you examined the cones? Maybe they are off somewhere, as to surface curvature, or too small in diameter. Is there any binding in the tension train of gears? This might give trouble.

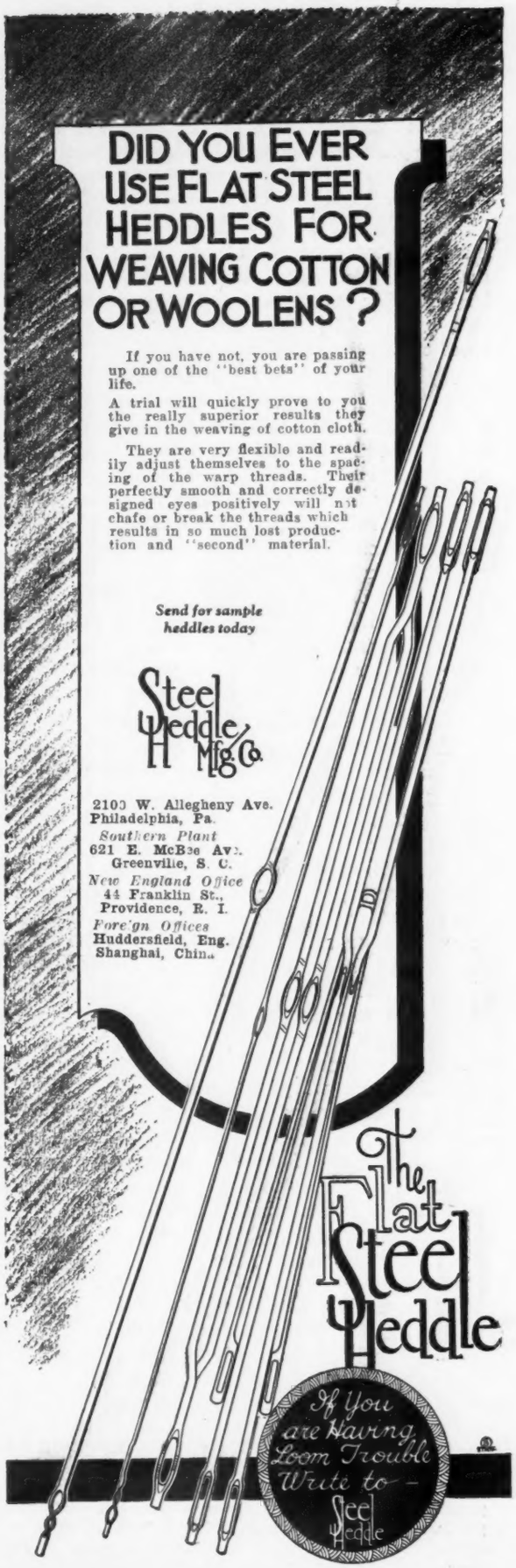
It could be, I think, that the cone belt is slipping. As you know, if the cones are built correctly, the top one has a concave surface and the bottom one has a convex surface. The greater or more distinct part of this cone surface curvature occurs on the portion of the cones covered by the first one-third of the entire traverse of the cone belt and takes care of the first half of the full bobbin diameter. Now on this first one-third section of the cones it is harder to get a perfect contact between the cones and the cone belt, due to this slightly lop-sided position which the belt is in. Naturally it would be easier for the belt to slip here, and cause a lagging in the speed of the bobbins, than anywhere else.

Therefore, I suggest the following examination:

Pliability of cone belts, as a very pliable one is necessary. See that cone belts are not too tight or too slack. See that spindle bolsters are properly oiled and not gummed with lint and dirt. Examine the bolsters and see that they are properly plumbed. See that none of the racks are binding. All of these put an excess load on the cone belt, giving it a good opportunity to slip. The frame should run as smoothly, lightly, and as nearly balanced as possible.

H. R. (ALA.)

EDITOR COTTON:

Please give me a little space in your magazine to answer a question asked by "V. T. (GA.)" in your No-

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vember issue. He wanted to know why it is that the ends on a Saco-Lowell slubber run slack until the bobbin is about half full, and then run tight for the rest of the doff.

A lot can be said on this question, but I believe that by practical experience I have solved this problem, and can, in just a few words, give some information that will be of help.

I believe that the ends getting slack indicates that the lay is too open, while their getting tight shows that the tension is too small. Now I realize that a large number of mill men will not agree with me on this, but I think I can show that my conclusion is based on sound reasoning.

My experience with fly frames teaches me that to start the frame with the lay too open causes the ends to get slack until the doff is around half full, after which point they begin to get tight. Thus, on account of the slack caused by the excessively large lay gear, it is necessary to run a very small tension gear, which causes the ends to get tight because the tension has not let off enough to take care of the size of the doff. On the other hand, if as many coils per inch as hank roving will permit are put on the bobbin, I believe the trouble of ends getting too slack and then too tight will be eliminated. This is due to the fact that the more coils per inch put on the bobbin, the larger must be the tension gear, which will keep the ends from getting tight when the doff begins to get full.

The method I use to find the proper number of coils per inch is to multiply the square root of the hank roving being made by twelve. Then since "V. T." is making .70-hank roving, he should have the following number of coils per inch: $\sqrt{.70} = .837$, and $.837 \times 12 = 10.044$, or 10 coils per inch. Then after finding the number of coils per inch desired, I try different size lay gears until I find the one that will give me the proper number of coils per inch, after which I make sure to get the tension gear large enough to run a good end. I have changed the size of the lay gear on some fly frames as much as five or six teeth in order to get the desired number of coils, which necessitated using a tension gear of from five to seven teeth larger.

I had some warp fly frames running 5.60-hank roving, which were running very good, and some filling fly frames, making 7.00-hank roving, that were not running so good. I had the proper number of coils per inch on the warp fly frames, but discovered that I was also running the same number of coils per inch on the filling frames, which of course was incorrect. However, after changing the filling to run the proper number of coils per inch, I had no more trouble.

I hope that I have made myself clear enough to give the information desired.

J. O. B. (N. C.)

Rayon Year Book for 1930.

"Rayon, and Other Synthetic Fibers" is the title of a book issued by *Textile World* for the McGraw-Hill Book Company, 370 7th Avenue, New York City, as the 1930 year book on rayon. This book, containing approximately 250 pages, represents reprints of general and technical material published in Textile World during 1929. It is the second edition of the Rayon Year Book. It contains production figures and information pertaining to rayon processes.

Twists and Roll Speeds for 40s and 43s Filling.

ONE OF OUR SUBSCRIBERS recently sent in the following question: What should be the standard twist on 40s and 43s filling on a 7-inch traverse, 1½-inch ring, ⅞-inch cotton, spindle speed 8,000 r.p.m.? Also, what should the front roller make with the machinery in bad shape?

After submitting the question to several of our subscribers and receiving their replies, we decided that these questions might also prove of interest to others and that it would prove worthwhile to publish the replies.

One of the men stated that he did not think anyone should try to make 40s and 43s filling out of ⅞-inch cotton and most certainly not on spinning in bad shape.

He also stated: "On 40s and 43s filling with a spindle speed of about 8,200 r.p.m., 1 15/16-inch, No. 1 flange ring, 7-inch traverse, 1 1/32-inch Western cotton, spinning in pretty good shape, we are making about 100 turns front roll on the 43s and about 104 to 105 on the 40s. Our records show that we are putting in 24.86 turns per inch on the 40s filling and 26.2 turns per inch on the 43s filling. This is about four turns per inch over standard on the 40s and about five turns per inch over on the 43s.

"As already intimated, we have never tried to make this weight filling out of ⅞-inch cotton. We think if we had to, though, we would consider that we were doing mighty well if we could get 85 turns on the 43s and 90 turns on the 40s. This is simply an opinion and is not based on any facts except that a few years ago we made these same yarns out of 15/16 to 1-inch cotton and had to cut our speed down about five turns under the speed given in the foregoing. We think that ⅞-inch cotton would cut it down more than five below what we were on when using 15/16 to 1-inch cotton.

This same man claims that in regard to twist, the only way they see to run this is to just twist it to the point where it will run.

He also states that the speeds indicated in the foregoing are for fair to good running work and not just what a man can get by with.

Another contributor states that the standard twist per inch for 40s and 43s is 3.50 times the square root of the number of the yarn. The square root of 40 is 6.325, so that $6.325 \times 3.50 = 22.13$, which is the standard twist per inch for 40s. The square root of 43 is 6.557, then $6.557 \times 3.50 = 22.95$, which is the standard twist per inch for 43s.

With reference to the front roll speed with the machinery in bad shape, he recommends a front roll speed of 96 to 100 r.p.m. on the 40s, and a front roll speed of 90 to 94 r.p.m. on the 43s. He said, taking into consideration the ⅞-inch cotton, the 7-inch traverse and the 1½-inch ring, that anyone would be doing good business to make the aforementioned speeds. He thinks that 8,000 r.p.m. is about the correct speed for the spindles.

Still another writes in that on his 40s filling he

GLARE

is your eyes'

chief enemy

HOW glare can interfere with ease and certainty of movement and thus slow down production in an industrial plant is simply demonstrated. Drive your car at night and observe the glaring headlights. They slow you down, don't they? Or watch the outfielder at a ball game miss an easy fly when the sun is in his eyes. Consider the precautions the Esquimaux take to protect themselves against snow-blindness—how they wear eye masks with narrow slits to shut out glare. The Indian with his hand shading his eyes is a well remembered picture.

Yet in many plants today improper lighting puts glaring light sources directly in the field of vision for all workers. Or a plant is so lighted that glittering reflections come from the highly polished surfaces of machinery. Wherever there are spots of brightness excessively different from their surroundings, the eye tries to adapt itself to them and cannot discriminate details to whose brightness it is not adapted.

Because Cooper Hewitt light produces no glare is one of many reasons why it is used today in leading industrial plants. Cooper Hewitt light is used by such outstanding exponents of manufacturing efficiency as General Motors, Stehli Silks, S. K. F. Industries, Holeproof Hosiery and a host of leaders in other manufacturing fields.

It will interest you to know all the reasons. For this purpose a simply written booklet has been published entitled, "Why Cooper Hewitt Light is Better Than Daylight." Yours for the asking. Address: General Electric Vapor Lamp Co., Hoboken, N. J.

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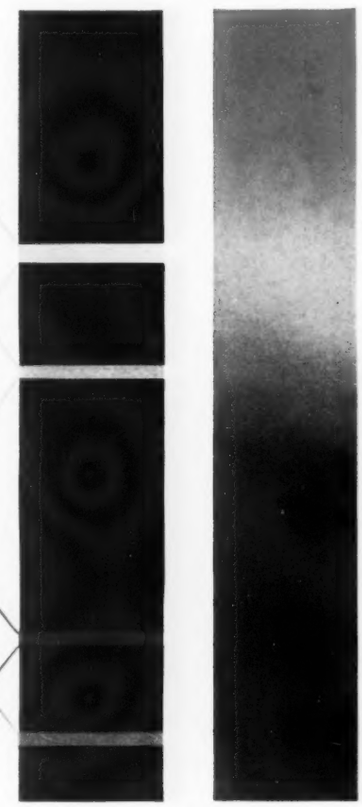

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[*See next page*]

Like opera glasses at the opera —

Field glasses can serve little purpose in the laboratory. There only the microscope will do. Opera glasses are of little use to the astronomer. The telescope serves his purpose in the observatory. Indeed, none of these aids to vision is effective for any other purpose but its own.

❦

As these different kinds of glasses serve best the different purposes of each, so in these modern days of specialization is it recognized that different kinds of light serve best their different special purposes in commerce and industry—daylight, ordinary artificial light and—Cooper Hewitt light.

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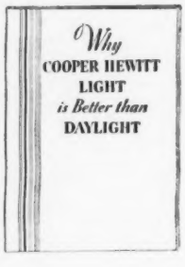

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has 26.14 turns of twist per inch, and on his 43s filling 29.41 turns per inch. On his 40s his front roll speed is 108 r.p.m., and on his 43s it is 98 r.p.m. The spindle speed on both numbers is 8,590 r.p.m. He uses a 1 5/16-inch ring and 15/16-inch cotton, with a 6½-inch traverse. He states that the machines are in fairly good shape.

He suggests that standards be disregarded entirely and that the amount of twist that will make the yarn run good be put in, and that the filling be conditioned to prevent it from kinking on the looms.

Any further discussion of this problem will be heartily welcomed by our "HOW OTHER MEN MANAGE" department.—THE EDITOR.

Explains Oil Spraying to "Wash".

EDITOR COTTON:

In the September issue of COTTON, one of your contributors, "WASH (R. I.)," commented upon the discussion with reference to spraying oil on cotton which had taken place at the Henderson meeting of the Southern Textile Association, Eastern Carolina Division, as reported in your June number. "WASH'S" comment indicated that he is opposed to the use of oil, and from some of the things he said I am inclined to believe that he does not thoroughly understand all of the problems in connection with this process. Therefore, I believe you will be willing to publish the following comments on his discussion and the discussion as it took place at Henderson, with a view to clearing him and other readers up on certain of these points.

The first and perhaps a generally interesting point which was brought up was the effect of the oil-spraying method upon the breaking strength of yarn. So far as I know, it is not the object of the oiling process to increase the breaking strength. If the fundamental idea of lubricating the fibers is correct, then oil should decrease the "breaking strength." Inasmuch as only 1/3 of the fibers actually break in a test, and 66 per cent slip by each other, the lubricants should increase this slippage and lessen the strength in breaking tests. The theory is correct, but in practice it is not true, for several reasons, one of which is that the oil is sprayed on the raw cotton when opened, and not on the yarn itself. I understand that the advocates of the oiling process claim the strength will remain about the same, and that about three-fourths of the time it will be increased. This increase is not due to the fact that there is oil on the yarn, but because a better and stronger yarn is produced from oiling the raw stock. Just as the lubricant will cause the fibers to slip by each other in a breaking test, it will also cause them to slip by each other in the cleaning, carding and other processes. The difference is, the oil is available back in the carding and spinning, while in the finished yarn it has practically spent itself in lubrication.

At the Henderson meeting, one of the members asked, "If you were going to build a new mill, would you use oiled cotton?" I have known several new mills to start on the oiling process, good mills and profitable ones. One I have in mind makes fine broadcloth.

In his letter in the September issue, "WASH" wanted to know "Where does the dust and fly go?" when the cotton is oiled. The law of compensation works in two ways. In this case, it compensates in better sanitation, health and happiness for the employees. Fifty per cent less dust is 100 per cent better living conditions. The weight is just the same, with or without oil (less the decrease in breakage of good fibers caused by the oil). Instead of flying around and floating through the air, the lint and dust is laid down by the oil. The cotton is more compact and cannot fly. The effect in the card room is remarkable, considering the small volume of oil sprayed to each hundred pounds of stock. Every pound of the original bale is accounted for, only the relative proportions of waste are changed.

"WASH" pointed out that if the oil is used to hold the foreign matter, surely it is carried to the finished yarn. The oil is not used for this purpose. It is used to remove or assist in removing the foreign matter. Some trouble was experienced a few years ago, but this has been corrected. It seems that the difficulty was that the mills were putting on too much oil. Unless a person has a complete understanding of the proposition, his conception of oiling cotton might be a sticky mass of fibers. To souse a wad of cotton in a drum of oil, then mop up a quantity of dirt, leaf, shale, motes, etc., would of course hold such foreign matter. It would do so with so much water, molasses or most any liquid. But this conception is erroneous. To reduce the friction between the fibers is a delicate problem of lubrication. To accomplish this requires only from four to six ounces of oil which must be distributed minutely throughout 100 pounds of cotton. A good many mills have used this more than four years, and have never found a trace of the oil after it is applied to the cotton, yet seeing the effect through better running work in the finished yarn. I have even heard it stated that using the oil will cause the card clothing to last longer, in that the oiling process keeps the clothing clean, with no rust and less wire breakage.

Your contributor also asked, "Why should it be necessary to plaster the fibers to retain what the principle of the card is supposed to remove?"

I do not understand what is meant by plastering, but judge he means something like cementing or sticking. Anyhow the idea of lubricating the fibers is to accomplish the opposite condition. Lubrication here is no different in principle from lubricating a bearing. It makes the fibers slip by, slide, parallel, or machine easier (if I may use these terms). As a boy in school, they taught me to rub fibers on a smooth surface to produce electricity. The fibers would then pick up a piece of paper, leaf, etc., very much the same as a magnet attracts steel or iron. The same principle is at work all the time that cotton is being handled in the mill. The friction releases static electricity, which in turn attracts the foreign matter, more or less, depending upon atmospheric conditions and other factors. The static carries the trash, just the same as high water carries driftwood down the river. Oiling cotton reduces this friction, and dissipates the static, hence, better cleaning.

"WASH" next pointed out that J. J. Brown, at the Henderson meeting, stated that oiled stock gave more waste at the picker room, and said "When we remember how careful our forefathers were in opening the bales five or six days before mixing, we are not amazed at this statement."

With reference to Mr. Brown's statement, this is as it should be if the stock is properly lubricated. More waste, meaning motes, dirt, leaf, short fiber, etc., is noticeable in every process. The further back in the process of cleaning, the more noticeable the waste. To illustrate this point in another way, for instance, there is less waste to be found at the spoolers on oiled cotton than on plain cotton. At this point the cotton is well along in the mill, and if it carried waste it should show more. The fact that it shows less, is because the waste had been removed before reaching this point. This holds good all along the line. Considerable spraying is being done now in the vertical openers, and more trash is noticeable at once.

The reason our forefathers opened the bales five or six days before mixing was to condition the cotton, allowing it to dry out, and at least something happened to it, and my guess is that the cotton ran better for them. It does show something of their efforts to help themselves along the same line as oiling cotton. If anyone believes that cotton cleans better dry than with a moisture content, then the old, old question is involved "Does cotton clean better dry or moist?" I don't know. I do know, however, of more than one mill which have recently put in drying systems of hot air, steam arrangements, etc., allowing the cotton to dry over night, and where it is done in bales, to have them open twice their size by morning. All of these mills are using oil on their dry cotton to make it run better. From a manufacturing standpoint, humidity is nothing more or less than lubrication. Dry the cotton and you sacrifice this advantage. The drier the cotton the more it flares and the more static is released.

In your September number, "WASH" said that nothing was brought out at the Henderson meeting with regard to the appearance of the finished yarn. However, the Arkwright's test on oiling which was published in the August, 1929, Year Book of the Southern Textile Association not only makes reference to the finished yarn, but points out an increase in breaking strength. The test was made on 60s yarn, a very fine yarn in which the human eye can detect flaws, imperfections or any difference, and yet it is quite possible that a five per cent difference in quality could exist without detection. Of course on coarse yarn the difference in appearance is more readily noticeable. The yarns are smoother, with less thin places, slugs, neps and protruding fibers.

In conclusion, let me point out that there are two essentials for successful oil spraying—distribution and lubricants. The first is mechanical, and like most mechanical things cannot be perfected in a day. Second, the lubricant is and must be especially prepared for oiling textile fibers, such as cotton, wool, jute, asbestos, etc. Lubrication is an art, as it applies to these delicate textile fibers. First comes the process of refining them, then by incorporating certain other materials to produce the greatest possible cohesion of oil particles, to maintain a low surface tension. It is not a question of penetration, but a question of surface attraction to hold the oil on the outside of the fibers. Then of course there is the card clothing to consider, leather rolls, and all subsequent operations, such as dyeing, bleaching, mercerizing, sizing, scouring, etc.

LINNWOOD (N. C.)

"Wash" and Others Reply to Question on Breaking Strength.

Why yarn breaks stronger at night; and opinions as to the proper twist in making 50s/1 combed, filling twist.

EDITOR COTTON:

On page 1401 of the October issue of COTTON "I. P. (N. C.)" asked some questions that are certainly not easy to answer. His first question was, "In making 58s/1 combed filling twist, out of 1 3/16-inch Strict Middling cotton, what breaking strength should be obtained?"

In reply to this question I would say that yarn is made weak by lack of twist and also by excessive twist. So judgment plays an important part. Then too, there is a difference in the breaking strength of yarn taken from a full bobbin and that taken from an empty bobbin. The yarn first spun breaks stronger. The following rule under perfect conditions will give the exact breaking strength of the yarn:

For 58s/1 combed filling twist, use 2500 as a standard minuend and from this minuend subtract the product of the yarn number multiplied by four. Then divide this difference by the yarn number. Example, $2500 - (58 \times 4) = 2268$; $2268 \div 58 = 39$ lbs., which is the breaking strength of 58s/1 combed filling twist.

"I. P." next asked for suggestions as to means by which a good breaking strength on this number might be secured and maintained. I will say that the breaking strength of yarn can be secured by a change of stock, a change in doublings, in settings, in equipment and twist. Having the cones suitable to the flyers run is a great aid. Atmospheric conditions always play a very important part also. However, the strength of yarn will always vary.

He also wants to know why it is that the breaking strength on the same number of yarn in the same mill is better at night than it is on the day run. The answer is, atmospheric conditions.

The relative humidity of the air may be regarded as the degree of approach to saturation. It is greatest near the surface of the earth during the night when the temperature, being at or near the daily minimum, approaches the dew point. It is also great in the morning when the sun's rays have evaporated the dew and the vapor is only diffused a little way upwards. It is least during the greatest heat of the day.

WASH (R. I.)

EDITOR COTTON:

I would like to try to answer some of the questions asked by "I. P. (N. C.)" in the October issue.

In regard to his question on the breaking strength of 58s/1 combed filling twist, made out of 1 3/16-inch

Strict Middling cotton, I would say that this should break at about 20 pounds per skein.

A vast amount of space could be devoted to the discussion of breaking strength and there would still be much about the subject left to discuss. I hope, however, to be able to bring out a few things that will be of some aid to "I. P. (N. C.)".

The finished picker lap should weigh about 11 ounces; the card draft should be about 120; the wire on the cylinder should be number 34's, that on the doffer and flats number 35's, and all of these wires should be kept so sharp that the points of the wire will pull and cut the finger nails when rubbed against the points of the wire. All trumpets should be the correct size in bore; the cans on the cards and drawing should not be run too full; and the speed of the front rolls on drawing should not be more than 120 r.p.m.

If the mill has three processes of drawing, the first should be used next to the cards and the other two after the stock has been combed; ends on roving should not be run too tight, nor too slack; all skewers (or roving sticks) should be kept good and sharp at the bottom; all roving should be creeled with one top strand and one bottom strand, as we all know that the two top rows of roving have a much greater strain on them because of the greater distance from the top of the frame to the rolls. Then too, all roving traverses should traverse as close to the ends of the rolls as they will permit so as not to run the roving over ends of them.

I hope that you will be able to publish this and that it will be of some help to "I. P." However, if it is not, maybe it will at least start some of the old birds with the gray matter in their heads to thinking and they will contribute something worthwhile—someone like OLD TIMER, for instance. Gee. but he is a live wire, and his writings alone are well worth the price of a year's subscription to COTTON. That is what I think of his writings.

CONTRIBUTOR No. 4674.

EDITOR COTTON:

With regard to your recently published inquiry as to why yarn breaks stronger at night, it is a general rule that the same relative humidity is not used in the day that is used at night. Furthermore, a better temperature condition exists at night, and also, as a general thing, there are more doors open in the day time than at night.

S. F. (GA.)

Saco-Lowell Moves Greenville Office.

Saco-Lowell Shops, of Boston, Mass., on January 1st moved its branch office at Greenville, S. C., to Spartanburg, S. C., where the offices are located in the Montgomery Building. Re-arrangement of sales territories and railroad facilities are the reasons stated that prompted the change. The southern headquarters will remain at Charlotte, N. C., in the Saco-Lowell Building, where is maintained, besides a sales office, an extensive supply and repair department. No change will be made in the Atlanta office. H. P. Worth, manager of the Greenville office, is in charge of the Spartanburg office. J. M. Reed has been assigned to the Spartanburg office as assistant to Mr. Worth.

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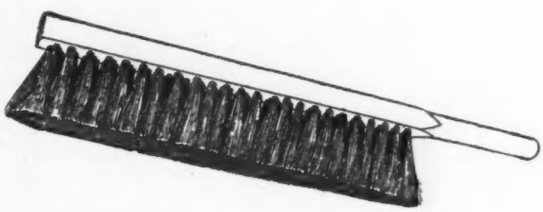

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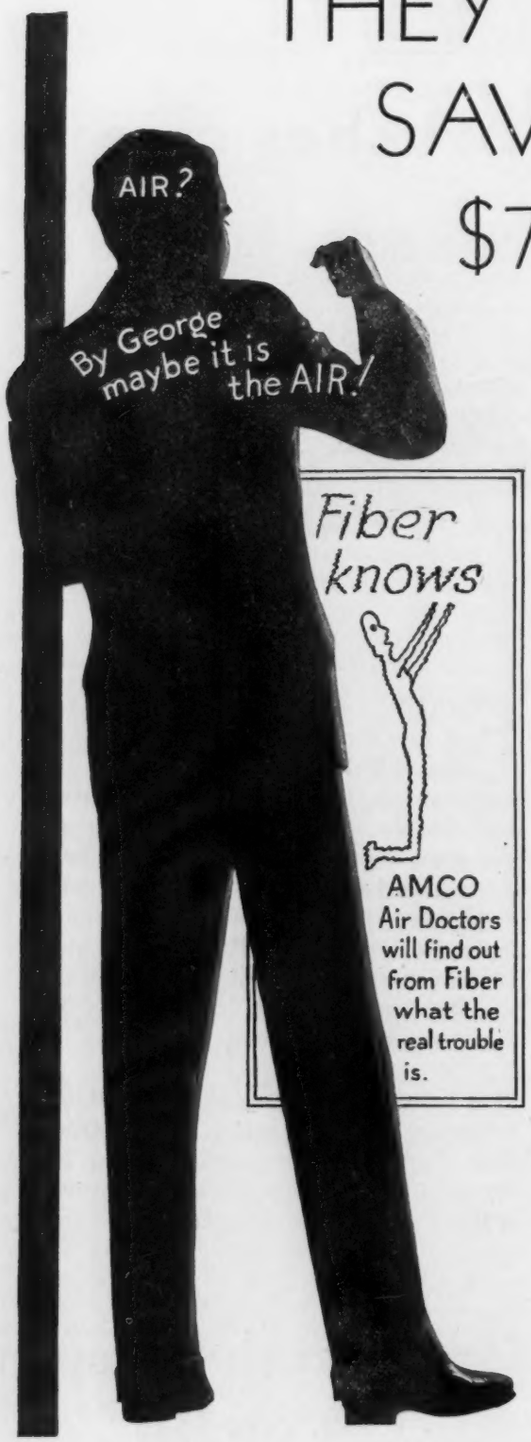

A LARGE New England mill using about 100,000 pounds of cotton a week, put in a modern humidifying system which cost them approximately $25,000. installed.

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Proper Ring and Traveler Sizes for 50s.

A number of interesting opinions as to the proper size of ring and traveler to use on this number. What is your idea in the matter?

EDITOR COTTON:

You recently published an inquiry from "CONTRIBUTOR No. 4667," who wanted to know the largest size ring that could be practically used in spinning 50s warp yarn, with 4 × the square root of twist, made from 1 3/16-inch cotton, without injury to the yarn. This inquiry would naturally open up an opportunity for considerable discussion, as there are many related factors which have a bearing upon the size of the ring to be used.

In the first place, I would suggest the use of a solid single flange ring, as my experience has shown that this produces a better quality product than does the adjustable type. General practice would suggest the use of a 1⅝-inch ring on this number, using a 17/0 traveler, ⅝ circle. I am sorry I cannot recommend definitely a bobbin diameter to use in this case, but I noticed recently a table of bobbin diameters which recommended the use of a ¾-inch bobbin in connection with a 1⅝-inch ring. As indicated, this seems to be a pretty general practice as to the ring size to use on 50s.

In addition to this, I have some suggestions to make to your inquirer. I believe he will find that to use a 1¾-inch ring, with a 1 1/16-inch bobbin barrel diameter would give him the best results. I would suggest the use of a 19/0 traveler, ½ circle, and he may be familiar with the fact that there is a ring available which carries a slightly smaller flange than the regular No. 1 ring, and it would be my suggestion that if he can secure this ring that he experiment with it.

Of course, the angle of pull, from the bobbin to the ring, has an important bearing on the production of good yarn, but as indicated, I believe he will find a 1¾-inch ring and 1 1/16 inch bobbin practical and that he will find this to be a happy medium to strike with regard to the size of the ring and bobbin as well as the relation of the size of the ring to the size of the bobbin.

With regard to the weight and circle of traveler, my recommendations of course in this respect are for experimental purposes only, and it would be necessary for him to test different weights and circles before finding just what he desires.

I trust the foregoing will be of benefit and shall be very much interested to read of other recommendations in connection with this inquiry.

BOB (GA.)

EDITOR COTTON:

In answer to the question as to the largest size ring practical to use in spinning 50s yarn with 4 × the square root of twist, I would think that the diameter of ring to be used would depend, to a great extent, upon whether the spinning is being done in a mill several years old that is equipped with light spinning frames of narrow gauge, or whether the spinning is to be warp or filling wind, and whether it is to be

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Nobody is conscious of gradual temperature changes until the extremes are reached—very hot or very cold. Rooms left to manual control of its radiators rarely stay at the best temperature to insure health, comfort and fuel economy because of the wide temperature fluctuations.

The new Sylphon Automatic Radiator Valve will keep your room at the desired temperature. You simply turn the head of the valve to the temperature you want and your room temperature remains constant. The saving in heat radiation will more than pay for the small valve cost. Can be used on either old or new installations. Easily installed by any plumber.

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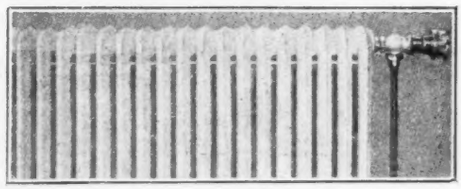

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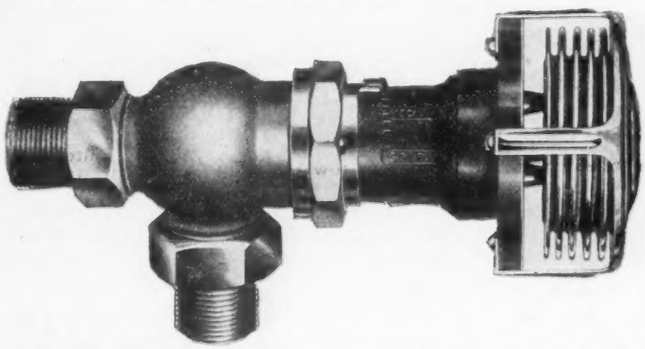

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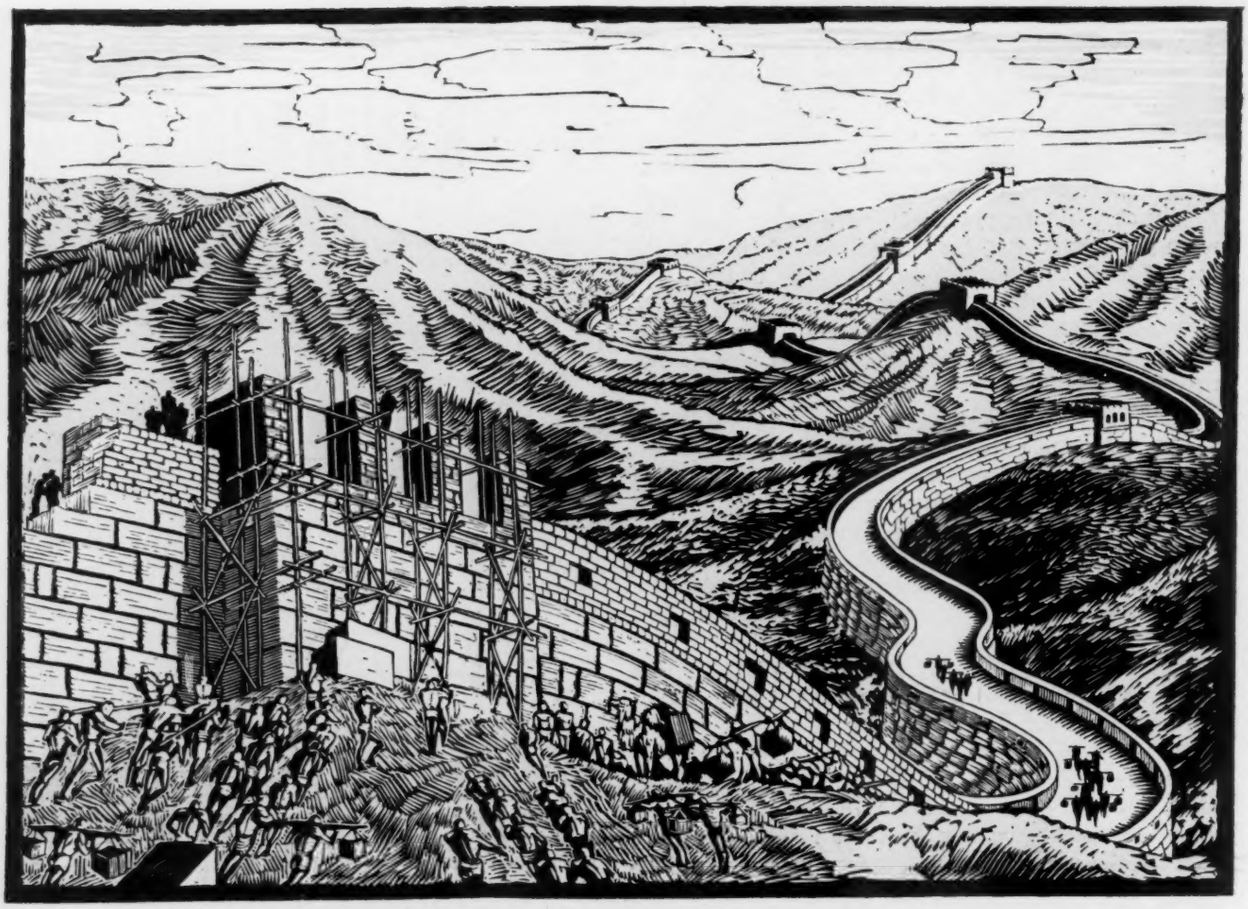

GREAT WALL OF CHINA

THE Great Wall of China, begun 246 B. C. and continued under several sovereigns, was an accomplishment the magnitude of which has never been exceeded in the history of human industry. Erected on China's boundary line as a protection against Tartar invasion, it was 1,500 miles long, over 20 feet high and 12 feet wide, its top fortified with parapets and towers. The wall's exterior surfaces are of brick, its interior filled in with earth. It surmounted hills and tops of mountains over 4,000 feet above sea level, passed into deepest valleys and, upon arches, crossed rivers. The mind can hardly conceive how materials were conveyed and a structure so vast erected by human labor over points apparently inaccessible.

The toil of primitive people, who slaved to carry out the whims of autocratic rulers, is quite a contrast to present-day democracy, where everyone chooses his own occupation and labor is lightened with machinery. New methods which save time and energy are constantly being found. Machinery and machine methods are invading every field of industry.

Textile manufacturing, in particular, is a concrete example of what machinery means to industry: faster production, lighter, more efficient labor, economical operating costs. Antiquated methods of hand labor, for which there are machine methods, are quite out of place in a modern textile plant.

Cleaning bobbins by hand is a slow, expensive process which increases operating costs, taking the time of weavers and spinners from production work.

Termaco Roving Bobbin Cleaners, Utsman Filling Bobbin Cleaners and Type K machines for cleaning both plain and automatic loom bobbins and certain kinds of warp bobbins will help you cut production costs. These machines save on labor, cleaning thousands of bobbins a day. They speed up production by keeping supplies of cleaned bobbins always ready for use. Bobbins are not split, and consequently last longer.

Terrell machines are of sturdy construction and last for years. For rapid, efficient and economical bobbin cleaning, they have no equal. Their outstanding merit is reflected in their use in the most modern textile plants of fourteen nations of the world!

Write for complete information about these machines. In writing, state whether you are interested in cleaning roving or filling bobbins, and if possible, send a sample of the particular bobbin you have in mind. If you are interested also in motor-driven machine, give full details, including voltage, phase and cycle of your current.

THE TERRELL MACHINE COMPANY, INCORPORATED
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done in a mill that is equipped with modern spinning frames of rigid, wide gauge tape-driven type.

In the former case, the largest diameter ring practical to use will be governed by the gauge of the frame and whether or not the package is to be used on a spooler that will take only warp wind. In this case, I think with a 2¾-inch gauge frame, the limit would be 1¾-inch in diameter, with a bobbin diameter of ¾-inch, giving an angle of yarn pull of 64 degrees, using a 13/0, ⅝ circle traveler, No. 1 flange, round point, with a spindle speed of 8,400 r.p.m. This should run very well.

The number of the traveler would necessarily be governed by the distance from the top of the bobbin to the guide wire, and would probably vary one way or the other from the foregoing.

In a case where modern spinning frames are used, and keeping in mind at all times the proper angle of yarn pull, which should not exceed 65 degrees, that is, increasing the diameter of the bobbin barrel in keeping with the diameter of the ring so as to maintain this proper angle, it should be very easy to spin 50s yarn, with 4.00 × the square root of the twist, on a 2½-inch diameter ring, No. 1 flange, with a bobbin diameter of 1 3/16-inch, giving an angle of yarn pull of 62 degrees, which, with the proper distance from the top of the bobbin to the guide wire (which in this case should be at least 2½ inches) should run well, and instead of doing injury to the yarn, this would really be less punishment than spinning on a very small diameter ring where the traveler wears faster and creates a sharp edge to cut the yarn; as on a large diameter ring with a sufficiently large bobbin, the traveler runs much smoother and the injury that the traveler does the yarn is much less.

In going to a large diameter ring, the same flange should be used as well as the circle of traveler, in order to get the smooth running of the traveler.

I know that 90s yarn, with 3.50 times the square root of twist, is being run at the present from 1 3/16-inch cotton on a 1½-inch diameter ring, No. 1 flange, drafting 18.36 with a spindle speed of 7,800 r.p.m., using a 24/0, ⅝ circle round point traveler with a roll speed of 76 r.p.m., putting 6,400 yards on the bobbin on a 2¾-inch gauge frame with an angle of yarn pull of 65 degrees and a bobbin barrel diameter of ⅝-inch. Also, 70s yarn with 3.00 times the square root of twist is being spun from 1 3/16-inch cotton on 1½-inch ring, with a bobbin diameter of ⅝-inch, roll speed 92 r.p.m., and is being twisted on a 3-inch diameter ring, No. 2 flange.

Some of the foregoing might not seem to be entirely in line with traditional practice, but I have answered the question in keeping with our own ideas of spinning.

T. R. (S. C.)

Hydro-Electric Installation.

The James Leffel & Co., Springfield, Ohio, announce that the Hydro-Electric installation at Middleport, N. Y., for the Buffalo, Niagara and Eastern Power Corp., Buffalo, N. Y., is typical of the modern trend in design and construction. The particular features are clearly explained in Bulletin W206, which the company will gladly send to those interested.

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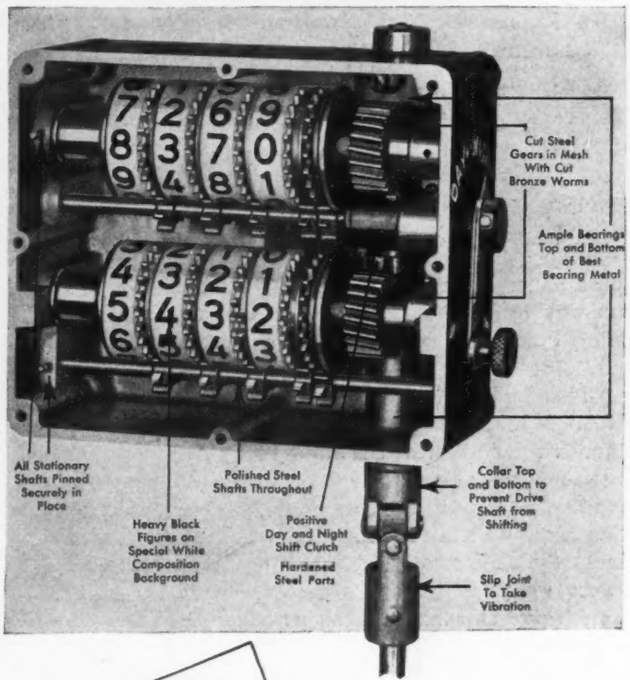
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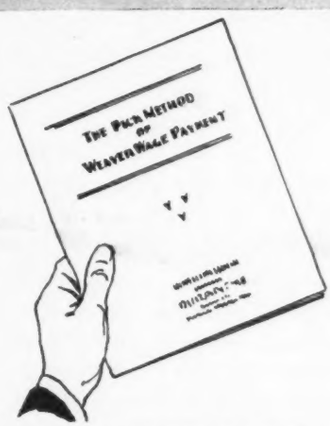

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Further Answers to "Old-Timer's" Weaving Questions

Compiled by J. W. Swiney

AS PREVIOUSLY ANNOUNCED, we present here a summary of some of the answers to the first two questions in "Old-Timer's" weaving contest, starting in the August issue. The complete texts of the three prize-winning letters, giving answers to all six questions, appeared in the December issue. As pointed out there, however, some of the other answers contained good thoughts in addition to those brought out in the prize-winning letters. In making the accompanying compilation, an endeavor was made to present as many different angles on the subjects as were brought out. Similar compilations on the other four questions in the list will appear in later issues.—The Editor.

WHILE GOING OVER the answers to the OLD TIMER weaving contest, in an endeavor to determine a winner, one of the judges, who happens to be one of the most successful mill men in the South, made the following remark: "Well, even though this fellow is not even going to be considered for a prize, he has certainly paid me for the time I have spent grading these papers. In one of his answers here, which by the way happens to be very good, he tells me something that I did not know but am very glad to find out."

This incident caused us to feel that there were probably other answers by those who were not lucky enough to win a prize that would hold the same meaning for some of you that this particular answer held for this man of many years mill experience. Hence in this issue we are compiling the various answers sent in to the first two questions. In choosing these answers we tried to pick representative answers that would give as completely as possible the diversity of opinions.

We found it necessary to quote several answers before we could adequately present the entire train of thought pertaining to these two questions.

The first question was:

"Why is the crank-shaft box placed below the level of the bearing on the lay sword?

One very complete answer read:

"The crank-shaft box is placed below the level of the bearing on the lay sword in order that the lay will have an eccentric motion and will not run at the same speed all the time. We all know that the crank-shaft maintains a constant speed while weaving, but few of us ever give a thought to the fact that the lay travels at four different speeds with each revolution of the crank-shaft. My diagram, shown in Fig. 6, will aid in the explanation of this. Of course the different looms have different length crank-arms, and these figures will not be accurate, but they will illustrate my point. On a 32-inch loom set as we are now running, the crank-shaft is on front center *a*, and turns to top center *b*, to back center *c*, to bottom center *d*, and back to front center *a*, *again*. As the crank-shaft moves from *a* to *b*, the lay travels from *y* to *z*, which is 3 inches; as the crank-shaft goes from *b* to *c*, the lay moves from *z* to *s*, which is 2½ inches; as the crank-shaft moves from *c* to *d*, the lay moves from *s* to *r*, which is 2 inches; as the crank-shaft goes from *d* back to *a*, the lay travels from *r* back to *y* which is 3½ inches. Since *a*, *b*, *c*, and *d* are all the same distance apart, and it takes the same time for the crank-shaft to travel these distances, then the lay makes 42.85 per cent more speed from *r* to *y* than it does from *s* to *r*. It can be seen that the lay travels a different speed from each of these centers.

"The advantage of these different speeds is to let the lay move as much as possible while the shuttle is in the boxes and as little as possbile while the shuttle is in motion. The shuttle is in motion only while the crank-shaft travels from top center to bottom center. The fastest movement of the lay from *d* to *a* is helpful to drive the filling up in the fell of the cloth. The loom set like this will not chafe the yarn as much as it would if the crank-shaft box was set level. Another advantage in this setting is, there is no dead center, while if it was set level there would be a dead center on both the front and back."

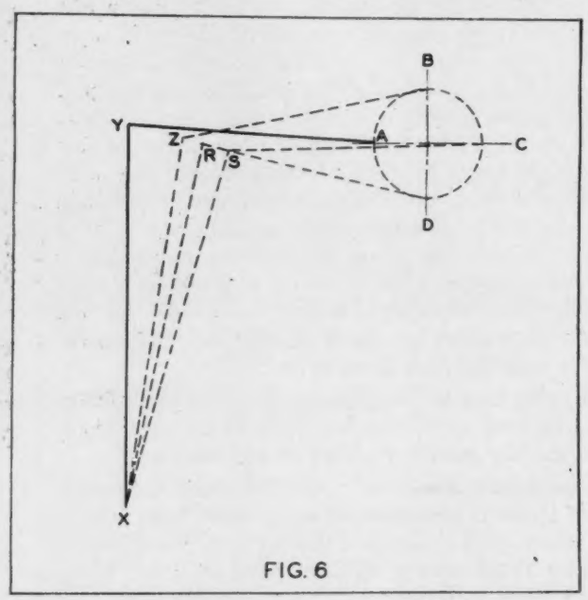

FIG. 6

Another man answered as follows:

"If one will just take the time to go to a loom, he certainly will be surprised at what he finds out by using a ruler a few minutes. If there were no unequal motion to the lay, the filling (picks) would just be laid evenly in the cloth. There would be no beating up of each end as there is now with the crank-shaft below the lay sword connection. The eccentricity caused by the present setting causes the lay to be traveling the fastest when it is coming toward the cloth, thereby forcing the pick well into the cloth in somewhat uneven sequence.

"Another reason for the crank-shaft being built lower than the sword connection is on account of the warp line. If the crank-shaft was placed on an even

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THE cost of stopping production at the warper, or *at the loom,* is too great to warrant taking chances with the spooling of the yarn. Here is a vital point in production, for if yarn unwinds in jerks there are going to be breaks and thin spots.

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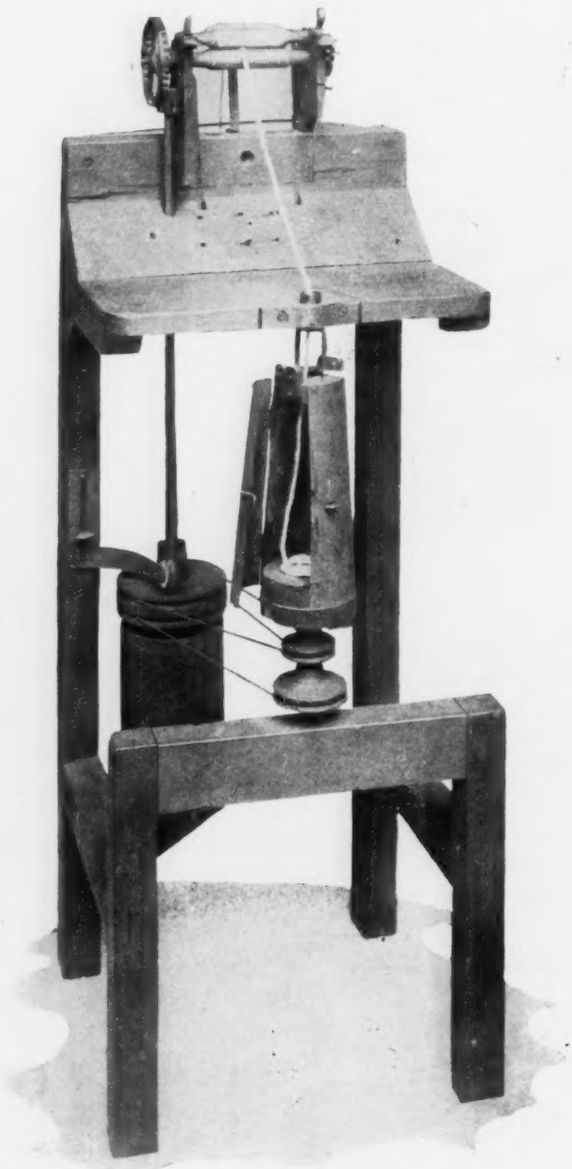
Pictorial History of Textile Machinery

By Prof. Chas. E. Mullin, D.Sc.
Clemson College Textile School,
Clemson College, S. C.

Part II.

(Editor's Note: This is the second of a series of features in which illustrations of the earlier models of regular textile machinery, together with brief descriptions, will be presented. The photographs and information were secured by Dr. Mullin on a recent trip to Europe. It is felt that these interesting photographs of old machinery will be suitable for filing or framing by the reader.)



Arkwright's First Drawing Frame

THIS IS Sir Richard Arkwright's first drawing frame, and was made by him about 1780. It was commonly known as the "lantern" frame, owing to the fact that the sliver-can employed had an opening in the side closed by a door through which the sliver was removed, and so somewhat resembled a lantern.

In this machine the front rollers turn at three times the speed of the back pair, and the sliver is fed on from the back of the machine through a fork which travels to and fro continuously, guiding the sliver to different parts of the rollers. It receives its reciprocating motion from a crank pin on a pulley, turned by bands from the main driving drum, the axis of which is vertical. After passing through the drawing rollers the sliver is led down through a short tube to a pair of rollers attached to the top of a vertical can of conical shape. The can is driven by a band from the main drum, and on its axis is fixed a pulley, from which a band passes over guide pulleys to the pair of rollers on the can, so that they feed the cotton into the can at a definite speed, while the turning of the can puts into the sliver a slight twist. Original in the British Museum.

plane with the sword connection the warp would be too close to the crank shaft for best results. Especially would this be so where the whip roll is raised away out of line to get cover on the cloth. Also on account of the warp stop motion."

"This varying speed of the lay causes the shuttle to run more smoothly against the reed, preventing the warp thread from being pinched by the closing of the reed dents, and also permits the loom to be operated at a greater speed with less power," another pointed out.

Another contributor brings out the interesting fact that by having the crank-shaft in a low position, not only is it out of the way of the warp and offers less chance of oil being thrown on the warp ends, but a more uniform and smoother motion is given to the lay.

The following method of determining the eccentricity of the lay was also among the answers sent in to the first question:

"To test this out, make a gauge, say seven inches long, turn the lay on back center, place the gauge against the reed and mark on the cloth where the end of the gauge comes to. Then turn the lay on front center with the gauge still against the reed and mark where the end of the gauge comes to. The distance between these two marks is the swing of the crank or lay. Measure half-way between these marks and mark the cloth again. This indicates where the gauge should be when the crank is on bottom center or top center, if the lay sword bearing and crank bearing were on the same level and working in the same plane as on a steam engine. But by placing the crank on bottom center and placing the gauge against the reed as before, you will find that the lay is nearly one inch behind the half-way mark. Now turn the lay on top center, still holding the gauge against the reed, and you will find that the lay has caught up and is on the half-way mark."

In regard to this question, another states, "This gives a firmer beat-up of the filling, and, too, to my mind, the crank-shaft bearing being lower than the connection pin gives the crank-shaft more lever power. For example, if you were going to set up a pole 50 feet high you would start at the top of the pole with your spike pole and gradually move the spike down, but do not go too far at a time, simply because you would have more lever power with a greater slant of your spike pole."

"All harness cams and dobby heads are made to time with the crank-shaft and pick motion, and, if the crank shaft were fastened straight across from the pitman arm to the lay sword, instead of being higher where it joins the lay sword, there would be neither the right stroke nor the right time for the shuttle to pass from one box to the other, nor would there be the right time for the harness cams," represents the answer of another to the question.

Another answer read: "If a lay moved equal distances on each side, then the crank-shaft bearing could be on a level with the bearing on the lay sword and would be correct, but the running qualities of the loom would be hurt by destroying the trough formed by the race plate and reed, for this way the shuttle race would not have any backward slant."

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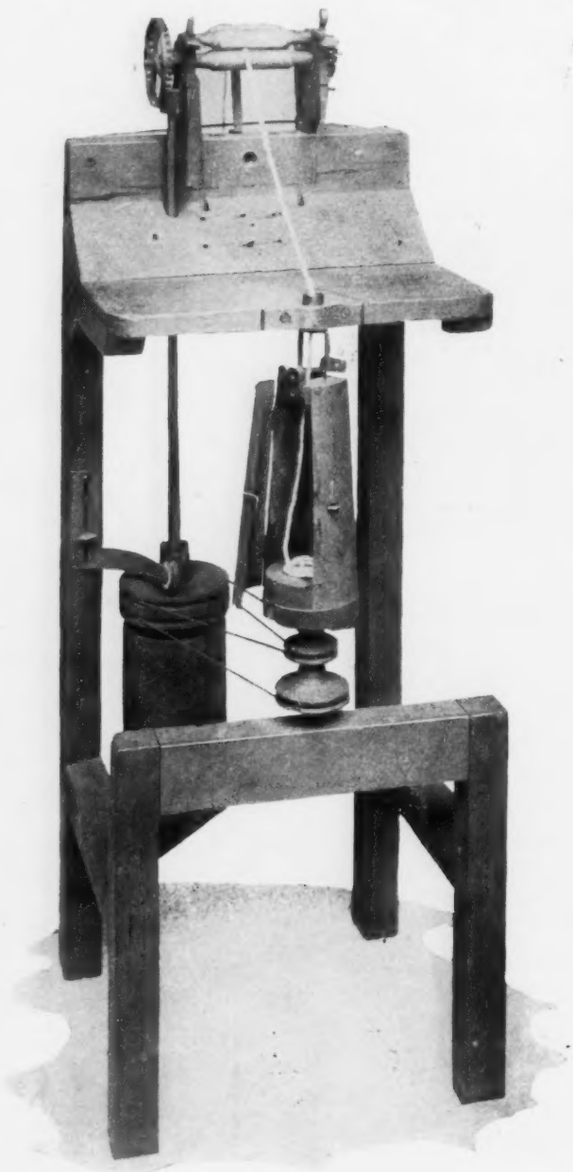

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In regard to this question, another states, "This gives a firmer beat-up of the filling, and, too, to my mind, the crank-shaft bearing being lower than the connection pin gives the crank-shaft more lever power. For example, if you were going to set up a pole 50 feet high you would start at the top of the pole with your spike pole and gradually move the spike down, but do not go too far at a time, simply because you would have more lever power with a greater slant of your spike pole."

"All harness cams and dobby heads are made to time with the crank-shaft and pick motion, and, if the crank shaft were fastened straight across from the pitman arm to the lay sword, instead of being higher where it joins the lay sword, there would be neither the right stroke nor the right time for the shuttle to pass from one box to the other, nor would there be the right time for the harness cams," represents the answer of another to the question.

Another answer read: "If a lay moved equal distances on each side, then the crank-shaft bearing could be on a level with the bearing on the lay sword and would be correct, but the running qualities of the loom would be hurt by destroying the trough formed by the race plate and reed, for this way the shuttle race would not have any backward slant."

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Still another contributor suggested that where it is necessary to make a change on a loom from fine goods to coarse goods it would be advisable, if possible, to increase the eccentricity of the lay because of the firmer beat up of the filling which would be obtained, and the corresponding increase in time allowed for the shuttle to pass through the shed.

Question No. 2 read as follows:

"What prevents the shuttle flying out of the loom when it is being run with only a reed, that is, no warp in it?

Here we found that much more uniformity of opinion existed than in the case of the preceding question. We believe that by quoting three or four of the answers that we received to this question that we will give the consensus of opinion of our contributors.

The answer of one contributor read: "Looms are usually timed to begin picking just as the crank-shaft reaches top center. In conventional loom construction, the cranks and pitman arms are at right angles when the cranks are at top center. This means that the lay is traveling backward at its greatest speed taking the boxed shuttle with it. After passing top center the lay begins to slow down and decelerate all the way to back center, that is, the point where the pitman arm and crank arm are in a straight line, where the lay comes to rest. The inertia of the shuttle tends to make it keep on traveling backward after the lay begins to decelerate. This tendency continues, even though the shuttle begins to move across the loom, when picking begins. It continues until the lay reaches back center, causing the shuttle to hug the box back and reed. As the lay starts forward again and speeds up to bottom center, the inertia of the shuttle causes the advancing reed and receiving box back to push forward on the flying shuttle, thereby not allowing it to leave the reed and box back, until the lay begins to decelerate again, at which time the shuttle is well into the box.

"In other words, from top center to back center the lay is slowing down, and the shuttle is, due to its inertia, trying to keep on traveling backward even though it is being picked across the loom. At back center all backward motion has ceased, although the shuttle is traveling across the loom. As the lay begins to accelerate again on its forward stroke, the inertia of the shuttle now causes it to tend to fly on straight across the loom and not come forward with the lay. The lay acceleration holds the reed and receiving box back against the shuttle. When the lay begins to slow down again, the shuttle is safely in the box.

"That these statements are true can be proven easily. Remove the reed and let the bare loom pick the shuttle across. In every case, the shuttle will pass behind the opposite lay sword. This is because the shuttle travels on backward while the lay slows down and there being no restraining reed it will pass off the race plate toward the rear.

"Now, set a pick cam so that it will pick on back center or shortly before. Without the reed, let that cam pick once. While the shuttle is in flight the lay will go forward and leave it and the shuttle will pass behind the opposite lay sword. Next, set a pick cam so that it will pick about front center, or slightly before, and let it pick once. In this case, with or without a reed, the lay will move back away from the flying shuttle and it will pass in front of the opposite box."

Another contributor stated: "There are several forces acting to hold the shuttle on the race plate while the loom is running without a warp. For convenience, they are listed as follows and will be explained in turn:

1. Downward pull of gravity.
2. "Trough" of the lay.
3. Inertia of the shuttle.
4. Pressure of the race-plate on bottom of shuttle.

The forces of gravity, acting downward, will naturally be one factor in keeping the shuttle in the loom; and though slight in comparison to the other forces, it must be considered.

By "trough" of the lay, we mean the tilted position of the angle formed by the reed and race-plate. A loom lay does not rock back and forth uniformly, but moves from a vertical to an angular position. Thus, when the right angle formed by the reed and race-plate is moved backward it is also moved downward, and the race-plate keeps parallel to the bottom shed of the warp. This tends to form the "trough" and the shuttle passing across at this time will be tilted inwardly and have less tendency to fly out of the loom. The sketch, Fig. 7, will aid in the explanation, as it shows a cross-section of the shuttle and lay. The center of gravity is thrown inward, as shown by the small arrows at *A*.

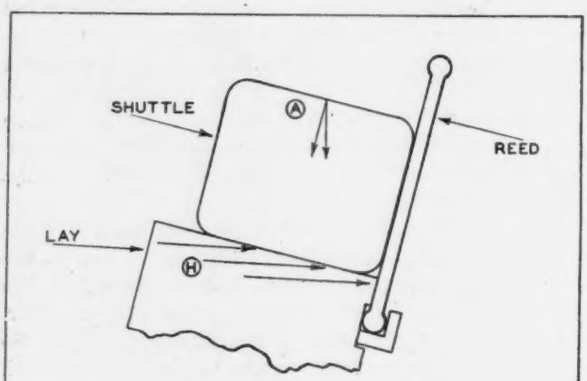

FIG. 7

In speaking of the inertia we refer to the force with which the shuttle presses against the reed. Imagine the loom running with the lug straps disconnected. The shuttle will remain in one of the boxes; but at the same time have a backward and forward velocity as well as the lay, for it is, at this time, a part of the lay. On the forward motion the shuttle presses against the front of the box, and on the backward motion against the back of the box. Picture the same loom with the same lug straps connected. The same backward force of the shuttle will be exerted as the shuttle leaves the box, and be continued along the line of the reed.

As force, in any body, is directly proportional to the mass of the body and its acceleration, the faster

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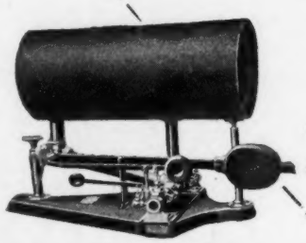

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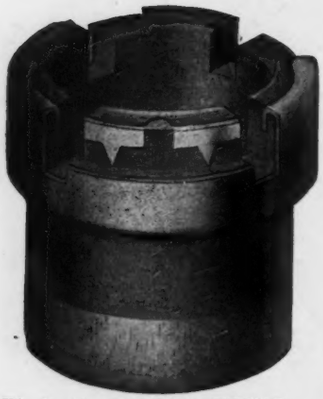

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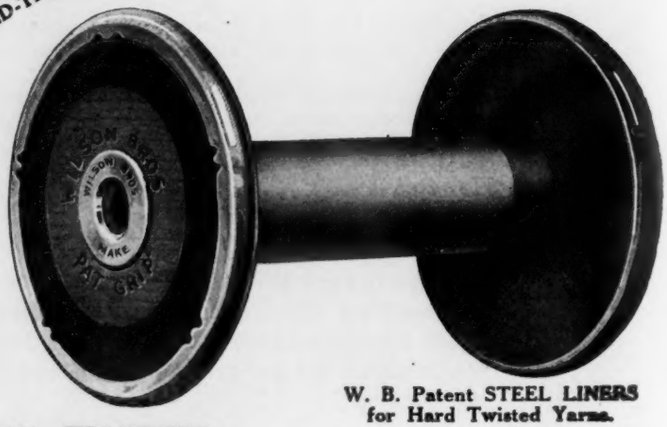

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the loom runs the greater will be the force pressing the shuttle against the reed, and the less will be its liability of flying out of the loom. Finally, there is a slight force exerted upon the shuttle, due to the upward tilt of the race-plate. Its action is shown in Fig. 7 by the arrows *H*. The amount is slight, yet positive, and must be considered. The race-plate moves backward and presses against the bottom of the shuttle in an angular direction, due to its slight upward tilt. With a warp in the loom this force would naturally be lessened."

Still another gave the following answer: "As a matter of fact, the warp does not keep the shuttle from flying out of the loom. The proper construction of the lay and shuttle boxes keeps the shuttle from flying out. First, the shuttle race is lined, and then the shuttle plate is lined to the shuttle race; then the reed is squared and the back box plate is lined to the reed. Then parallel the picker, having the shuttle box set so that the shuttle will be in the center of the box, with the right tension of the protecting rod spring and binder spring, and the fingers set so that there will be about 3/16-inch between the binder and finger on the protecting rod, with the check strap set with the proper check, and the pick lever and pick cam set and the right stroke on the lug straps, and with the power adjusted on the picker stick and picker arm, this loom would run until some parts are worn out without a warp."

(A similar compilation of the leading remaining answers to Question No. 3 and Question No. 4 will appear in a later issue. These questions were, "Why do you set the harness cams to pick from the right hand end with the back harness up—or do you?" and, "What part or motion of a loom prevents its being operated at a higher speed?"—The Editor.)

Bow in Wide Sheeting.

EDITOR COTTON:

In the November issue you published a question with reference to the causes of bow in wide sheetings, especially when it is torn. The man who asked this question said that the cloth seems to be woven perfectly, but when torn will bow several inches. He had in mind a 64 x 64 cloth, 22s warp, 27s filling, with 22.50 twist in the warp and 21.50 twist in the filling. This was made on a Draper L Model loom with compound and friction let-off. He said that when this cloth is torn and one side put up against a straight edge, bow can be noted. He said the ends come together but there is a decided bow in the center, and the only thing he can lay this to is the contraction of the filling.

I take it from his letter that he means the bow is in the side of the cloth, and not across the end where it is torn. If so, I think the filling thread is stretched at the ends of the cloth, which makes it a little wider at the ends than it is midway between the ends. This would make a bow in both sides of the piece of cloth. The filling will also contract where the cloth is unrolled, but it would contract at the place where it is torn the same as anywhere else; but the tension put on it when tearing it will stretch it, thus making it wider at the end. This tearing

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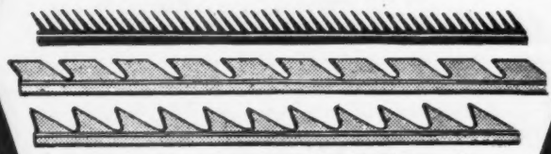

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Yet with all their quality and durability, Rockweave hampers, baskets, and trucks are priced right in line with the market. Their longer, better service costs you no more. . . . If your business requires the standard size products, we can ship any quantity immediately. And if you want special sizes, we'll make quick work of them, too. Our catalog, free for the asking, illustrates the complete Rockweave line, with suggestions for uses. Write direct to us.

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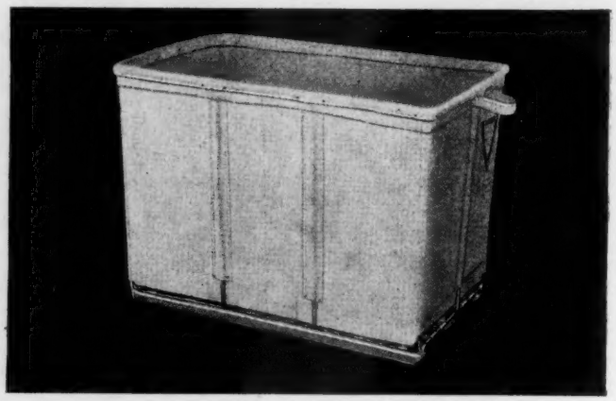

will have a tendency to make the cloth bow across the end also.

Then again, during the weaving process, the cloth on wide looms is more apt to slip on the sand or take-up roll; that is the selvages will sometimes slip due to having the thread wound around it, and that will prevent the perforated ends from holding the cloth as tight at the edges as it does at the center. This will cause the cloth to be tighter at the selvages or edges than it is in the center, when it is unrolled and laid out on a table.

A. M. (ARK.)

A Question on Rayon Weaving.

This man wants suggestions as to the proper surfacing for his take-up roll, and as to preventing cut filling. Can you help him?

EDITOR COTTON:

I would like to see some discussion in the "HOW OTHER MEN MANAGE" department as to what is the proper surfacing for take-up rolls on a 12x4 loom, making wide rayon goods. We make a construction of 60 sley and 50 picks, using 300 denier rayon.

We have considerable trouble, on this goods, with the material being cut on the sand roll. I mean that the rayon filling is cut all over the goods by the surfacing on the take-up roll. We have tried fine, medium and coarse, and steel and rubber surfacing. We find that we get the best results out of a medium steel surfacing after we get the take-up roll covered and sand papered until the burrs are about all cut off. We then find the cutting of the filling is about stopped. But then we have trouble with the goods slipping on the take-up roll, especially immediately after doffing the cloth. We run our goods face up, and we have tried running the goods face down, and that is still worse about cutting the filling.

If anyone has had this kind of trouble and has remedied it, I would be glad to hear from them. Or, if there is any kind of take-up roll surfacing available that will hold this goods to the take-up roll, without slipping and without cutting the rayon filling, I would like to know what it is.

M. T. (N. C.)

Atlanta Office of Ciba Moved to Greenville.

The Ciba Company, Inc., have announced the removal of their Atlanta, Ga., office to Greenville, S. C., where the address will be Chamber of Commerce Building. The Greenville branch is in charge of John C. Cosby, and is under the supervision of the company's southern manager, R. W. Glenn. A laboratory will be maintained in Greenville, together with warehouse carrying a full supply of Ciba dyestuffs, it is stated.

Wagner Electric Corporation Moves Two Branch Offices.

Wagner Electric Corporation announces the removal of two branch sales offices. The Milwaukee sales office and service station has been moved from 501 Broadway to 525-27 Broadway. The St. Louis sales office has been removed from 505 Shell Building to 909-9 Plaza Olive Building. They state that the removals were necessary due to increased business requiring more space.

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Bahnson Master Humidifier Control.

A MASTER CONTROL for humidifiers has been developed after a long period of experimentation, by The Bahnson Co., Winston-Salem, N. C., and has been placed on the market. The equipment, which is designed to operate a group of humidifiers in an accurate, sensitive and reliable manner, is illustrated in the accompanying photographs.

The heart of the control is the actuating element, and the company states that they have developed an adequate element for this purpose which reacts instantaneously to changes in relative humidity. This element lengthens as the relative humidity rises, and shortens when it falls, and the mechanism of the control is designed to multiply the movement of the actuating element to such an extent that this movement may be utilized to control the valve supplying water to the humidifying system. The water supply being governed by a motor operated valve, it is pointed out, this control is essentially a switch to close the circuit to the valve. The circuit is closed with a quick and positive contact in the control, and the circuit is broken by a switch in the valve mechanism, it is explained.

The complete control is shown at Fig. 1, while Fig. 2 shows the device with the covers removed, the actuating element being located at the top of the instrument. This element is attached, at the top, by an adjusting screw, held in place by a set-screw. At the lower end, the element is attached, flexibly, to a short lever. The regulation of the valve, directly from the expanding and contracting of the element, is secured through means of levers, springs, and contact points. A special toggle joint construction at the top of a long lever, illustrated in Fig. 3, produces quick positive electrical contacts that regulate the water supply to the humidifiers; *a* shows the position of contact when the valve is being closed; *b* shows the joint when contact is broken, which takes place when the valve is either completely opened or closed; and *c* illustrates the position of contact when the valve is being opened.

It is explained that the control, when installed, is adjusted to maintain the desired relative humidity, with the pointer at zero on a simple adjustment dial in the control. Gradual change in the humidity desired may be secured by a simple screw adjustment on this dial. A more drastic change is secured by changing the adjustment of the adjusting screws at the top of the actuating element.

When installed with the Bahnson type humidifier, it is explained, a pipe is run from the control to a point directly back of the fan. The suction created by the fan induces a current of air through the pipe, and as the pipe ends in the shield protecting the actuating element, a gentle current of air passes over the element constantly, it is pointed out, causing the control to react with great rapidity to changes in the humidity condition.

The working parts of the control, it is pointed out, are enclosed in a dust-proof case, and the hinged joints used consist of thin strips of spring tempered stainless steel. The company states that in rooms where the building vibration is great, the control can be set to operate with a variation in relative humidity of 1 to 1½ per cent above and below the desired point; where the vibration is negligible, the control may be set to operate within about .5 per cent of the desired point. In connection with the actuating element, the company explains that the greatest possible load on it is 11.8 pounds, while the breaking strength of the element averages 166 pounds. The current consumed by the motor-operated valve, it is pointed out, is approximately 0.6 amperes at 110 volts, and this current is required only during the opening or closing of the valve, each of which operations requires about ten seconds.

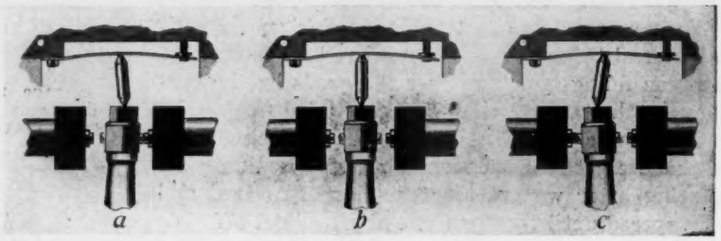


Fig. 3.

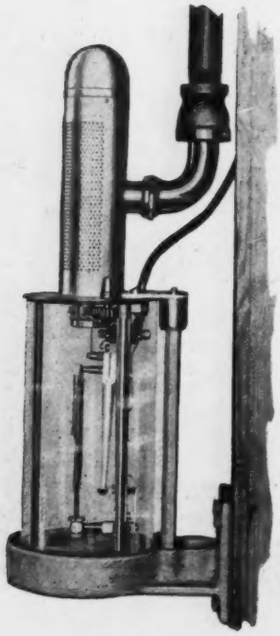


Fig. 1.

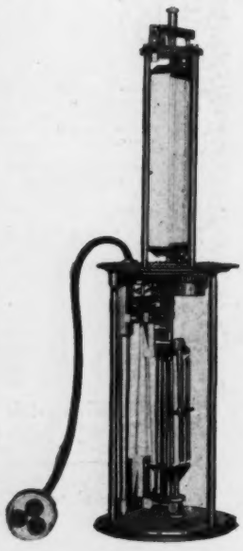


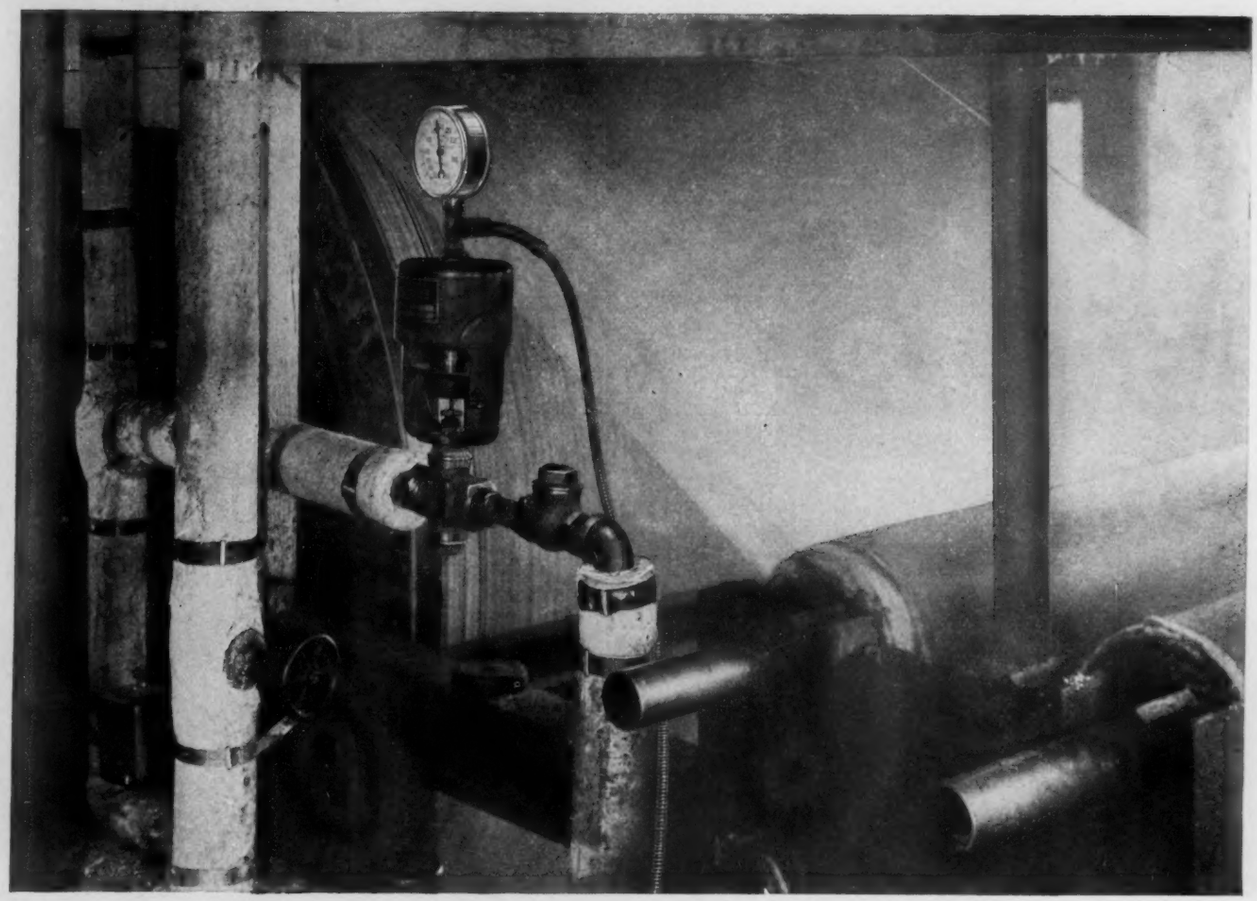
Fig. 2.

Extensive Advertising Campaign To Be Conducted.

It was recently voted at a meeting of manufacturers and selling agents that the necessary steps to be taken to form an organization of spiral knit manufacturers to engage in an extensive campaign to "sell" the trade and consuming public on the desirability and quality of their product.

Nyanza Inaugurates Styling Division.

Inauguration of a styling division whose function it will be to create new styles in a wide range of wearing apparel and offer them as a service to customers of the company, was announced recently at the offices of Nyanza Mills, Woonsocket, R. I., manufacturers of Nyon yarns.



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Center design printed on corn-colored linen for beach coats and sports dresses in chartreuse and brown . . . a National suggestion for spring.

Original National design in pale rose and turquoise on café au lait crêpe georgette.

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The Second Hand—
His Relation to Labor Cost.

THIS is the third of a series of articles covering the duties and relations of the second hand, appearing in the "How Other Men Manage" department. The second, discussing the selection of the second hand and his qualifications, appeared on page 1291 of the September, 1929, issue. Others will be published in subsequent issues.—The Editor.

EDITOR COTTON:

One of the most important considerations for the cotton mill executive is the question of labor cost. An absolute essential to the successful operation of a textile plant is that the labor cost be held to the practical minimum. Low labor cost does not necessarily mean low wages. In fact I seriously doubt the possibility of this problem being handled this way successfully. The man who pays cheap wages generally gets cheap help. A man who is content to work for fifteen cents an hour is probably worth about ten cents an hour. One who is willing to work for twenty-five cents until he can do better is doubtless worth thirty cents an hour, possibly more. Many executives have solved this problem by utilizing more of their employees' time, paying them well for services rendered, and then have watchd with satisfaction as their labor cost went down; and the pay of the individual went up.

Before entering into the discussion of this subject from the angle of the second hand, I will say that naturally the superintendent and the overseer will lead in the program of cost reduction. It will be necessary for all overseers and second hands to fully understand what it is all about. Then because of the peculiar relation of the second hand to the help, his attitude in the mattter will materially affect the cost figures in his department.

All cost figures, I think, should be based on the production of the weave room. Because after all each department in the mill is working to keep the weave room going. It will sometimes happen that one department will run more production than the weave room in one week. And because of the excess poundage over the production of the weave room the cost for that particular department will be high. But later the weave room will have to run up this excess poundage, then that week the cost for the other department will be down. Then there must be maintained a balance between each department. If one runs consistently ahead of the other departments, then the other departments must be speeded up, or this department slowed down to keep on a balance. So, in the long run, a cost figure based on the production of the weave room will be found equitable.

How to figure labor cost? Possibly there are a number of ways, but as I see it the simplest is to divide the total pay roll for each department by the production of the weave room, in pounds. The result will be the cost per pound for each department.

Example—

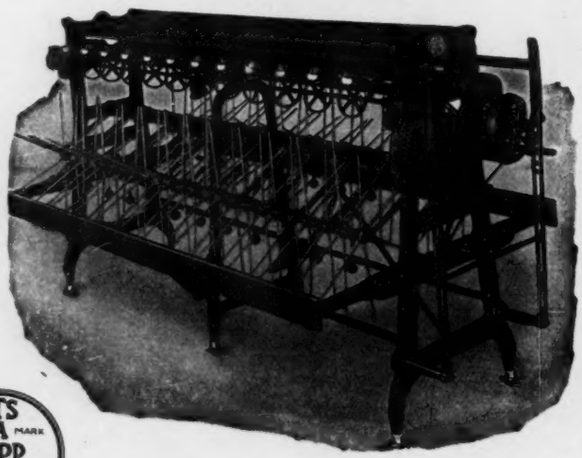
Production Weave Room	200,000 lbs.
Pay Roll Spinning Dept.	$1,000.00
$1,000.00 divided by 200,000 equals	0.005 per lb.

If the overseer hopes to succeed in the reduction of labor cost in his department let him go into the situation fully with his second hand, and secure his cooperation in carrying out the program. The second hand may know of many savings that may be made that the overseer had never thought of. He knows, should know at least, more of the details of each job, and whether they would be justified in giving certain employees more work. He is thoroughly familiar with the routing of all materials through their department, and will possibly be able to suggest savings along this line.

The second hand should be kept informed as to the progress made from week to week. Be just as quick to praise where praise is due, as to criticize when criticism is necessary. The second hand should assist the overseer in keeping comparative cost figures, then when fluctuations occur, especially on the high side, possibly he will be in position to give an explanation as to the probable cause. If the reason cannot be justified, immediate steps should be taken to remedy. If possible these figures should be secured weekly, and studied closely by the overseer and his second hand, for things that have gone wrong can be called to mind quicker than if a longer period of time is allowed to lapse before going into the matter.

As to some of the actual details of putting on a cost reduction program the overseer and the second hand must make up their minds that they are going to lower the cost of their department, but in this they want to play fair with both the company and the help. Cutting wages is the poorest way to begin. Also it is a bad policy, except in an emergency, to double up on jobs and lay off a lot of help. This lowers the morale of those left on the job. They feel that their time will be next. My plan is to first figure what re-arrangements are going to be necessary to bring about the desired results, then when the next vacancy occurs, proceed with caution to put the plan in operation. Several transfers to different jobs, and possibly to other departments may be necessary to get the help lined up to the best advantage. Of course some help will be lost, but if a spirit of fairness is shown, and tact and judgment exercised, a man will be surprised how small the number lost will be.

Say, for illustration, there are three men laying up roving in the spinning room. One of these works a notice. We have observed that all three have considerable time to sit around on the boxes and talk. We are paying them ten dollars a week. We are convinced that even in an emergency—and that should always be figured on—two men could take care of the work that three had been doing, and yet not be overworked. Let us call the two men who are to remain on the job, together with the second hand, and



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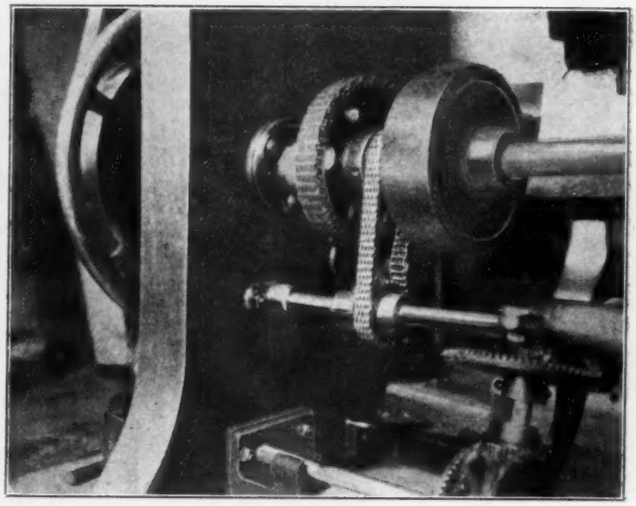
a line like this will nearly always produce results:

"Charlie, you and Bill are on the job ten hours a day, yet much of the time your job is up and you have nothing to do. Wouldn't you like to let us use some of your spare time and pay you a little more money?" The response is nearly always "Yes". "Well, we have been paying you men and John ten dollars a week on these roving jobs. John is moving to the country, so we are changing the work to two jobs, and offer them to you men, and will pay you twelve and a half a week instead of ten. In that way you will have more money when Saturday comes. The company can in this way raise your wages and at the same time make a saving for its stockholders."

Of course different tactics might have to be used in another case. But the foregoing has to my certain knowledge worked very satisfactorily in a number of cases. Sometimes machines may be speeded up with a corresponding reduction in operating cost. Often a re-arrangement of machines will bring about the desired results. Frequently drastic steps will have to be undertaken that will require that the overseer and second hand have backbone enough to put the thing over in the face of the possible loss of their jobs if the plan fails. A certain overseer whose department was scattered on two floors decided to get his work together on one of the floors. He rearranged some of the machines. Some he scrapped altogether, increasing the production on the others to take care of those scrapped. At first the work was crowded, but gradually the stock began to decrease. This allowed yarn boxes to be moved out, giving more room. He was able to cut out one section man and a number of other help. His supply bill was lower. The work was better supervised. The labor cost was greatly reduced, yet the employees working actually made more money. The second hand bearing his share of the burden in making the changes, came in for his portion of the praise when the work was successfully completed.

In nearly every department will be found one or more employees that keep up their jobs fine, but do a lot of knocking and growling, especially in the presence of some of the newer help. They try to discourage every new move made. They explain how the overseer is trying to work them all to death, and all that sort of bunk. The funny part of it is that this kind never leave, but just keep hanging on in spite of the "mistreatment" they are receiving. The second hand can do much to remedy this situation by spotting these fellows and making a special effort to keep them busy. A busy man doesn't have time to grumble and find fault so much. He can butt into groups of them that have gathered to talk, and at least change the course of the conversation for the time being. He might even have to take positive measures with some cases of this kind. For if a man can not be straightened up and lined up, he will do more harm than good and we might as well let him try some place else. I know of at least one case of this kind where the man had earned the reputation of being one of the worst knockers in the mill. Finally, when the overseer figured that he had



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about enough he discharged the man. In about a week the man was back. Now the overseer did what will not do in every case, but in this one worked: put the man back to work, and he has been a good, loyal hand since that time.

In connection with this class of help, the good second hand will of course never make the mistake of joining in any idle conversation that shows any semblance of knocking the management. For the minute he does it he kills his influence for good in that department. In spite of how dark things may look to him, his attitude should always be one of optimism and loyalty. When the second hand allows himself to think that the overseer and the superintendent do not know what they are doing, and that their way of doing business is all wrong, then he cannot cooperate as he ought, and should step out of the way and let someone else have the place.

There are perhaps a number of other ways in which the second hand might assist in the reduction of labor cost, but these will suffice as examples. The main thing is for the second hand to wake up to his opportunities in this direction, and no matter how small and inconspicuous his department may seem to be, he can make the "higher-ups" sit up and take notice.

CONTRIBUTOR NO. 4022.

"Right and Left Hand" Parallel Blocks for Looms?

Don't pass this up until you have studied it, and then let us have your serious ideas regarding it.

EDITOR COTTON:

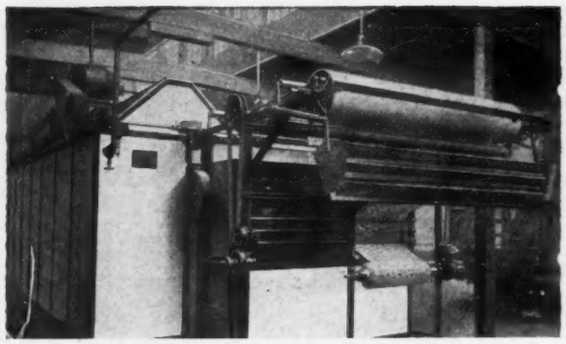
In your October number, you published on page 1366 the report of the weaving meeting at Greenville, S. C., and at that meeting, Mr. E. A. Franks, the chairman, read a question asking if there are any such things as right-hand and left-hand parallel blocks for looms. At the time, this created some amusement, with no discussion; and then at the afternoon session, Mr. Franks brought this question up again after all, declaring that it is common knowledge that one side of the block always wears first.

It happens that I am the man who submitted that question for discussion, but I was not present at the afternoon session when Mr. Frank brought it up again seriously. I therefore am taking this occasion to write to you, and through you to your readers, with regard to what my idea was on this.

It has always been my experience, in the weave room, that the parallel blocks always wear off more on the back side of the block. I have never seen blocks wear but very little except at the back corner. If the blocks wear off on the same corner every time, why not build up on that corner just a little? That is what I do, and the block lasts twice as long.

However, I know that some will say that the blocks do not cost very much, so why go to that trouble? But if you will stop to realize it, worn parallel blocks will cause filling to break in shade cloth, and other goods, and from your report it seems that some of the members were having considerable trouble with this.

It has been my experience that loom fixers will neg-



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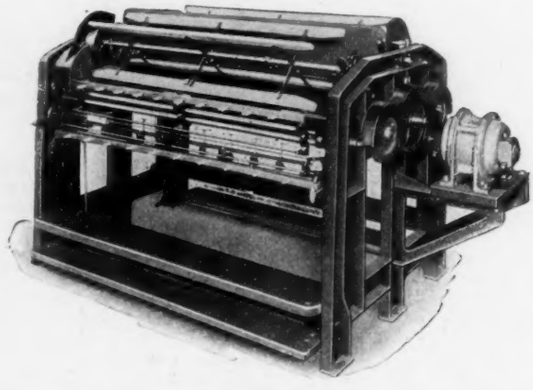
lect the parallel blocks. Therefore, if you can get them to last twice as long with one-half the work of putting them in, and also increase the production and quality by not having to change the block so often, then why not have them made right and left-hand?

I hope your readers will consider this seriously, and I would be very glad to see some discussion on this in your columns.

J. H. B. (S. C.)

New Reel for Rayon and Silk.

FLETCHER WORKS, INC., Glenwood Ave. and 2nd Street, Philadelphia, Pa., manufacturers of rayon and silk throwing machinery, have announced the development of Fletcher Model 29 Reel, for rayon and silk. A view of the machine is shown in the accompanying illustration. Rigidity and high speed production are emphasized by the manufacturers as the main characteristics of this machine. It was designed with a view to rugged construction to permit the highest possible fly speed with a minimum of vibration. The frames are exceptionally heavy and steady, the manufacturers point out, a 10-inch I-beam extending through the machine.



The total yardage of the skein is positively controlled through a train of gears driven from the fly to the yardage clock. At the completion of the skeins, the fly is stopped and a weight automatically returns the count gear to zero, a device preventing the starting of the fly until this has been done eliminating double yardage. This arrangement also is a safety feature, it is explained, as the flys cannot be set in motion by the operator by changing flys. The flys are lightly but durably built it is pointed out; the standard fly having four arms of straight grained maple, held in malleable iron spiders. The traverse bar is supported on rollers, and the porcelains are bolted to the bars.

The reel is furnished with either belt drive or individual motor drive. The reels are also available in half sections, known "wall type" installation along a wall.

Armstrong Cork Publishes Pamphlet.

Armstrong Cork & Insulation Company, Lancaster, Pa., recently published a very instructive little pamphlet entitled, "Erection Service."

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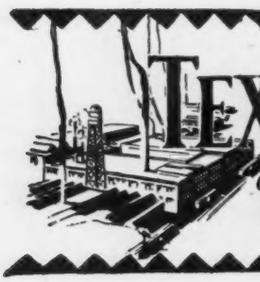

TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 301, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By The Bahnson Company, Winston-Salem, N. C.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville, Spinning Ring Co., Whitinsville, Mass.

12. The Pick Method of Weaver Wage Payment—Booklet, 20 pages. A practical manual giving full information and tables on this method of payment. By the Durant Manufacturing Company, Milwaukee, Wis.

13-A. Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

13-B. Dyed in the Truth—Vols. I and II. Reprints of advertisements of special interest to textile dyers. Describes equipment and uses of Monel Metal in meeting metal problems of the industry. The International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14-A. Fuses for Electrical Circuits—Leaflets illustrating and describing the TRICO Powder-Packed Renewable Fuse; Non-Renewable Fuses of cartridge type; and "COLOR-TOP" Plug Fuses. Sent on request by Trico Fuse Mfg. Co., Milwaukee, Wis.

14-B. Fuse Pullers—Leaflet illustrating and describing an all fibre tool for pulling and replacing cartridge type electrical fuses. Write Trico Fuse Mfg. Co., Milwaukee, Wis.

15. Saving Labor, Material and Power in the Textile Industry—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

16. Tycos Instruments for the Textile Industry—Catalog, 84 pages, illustrated. Shows instruments for every application in the textile industry, specifications, prices, diagrams and installation data by Taylor Instrument Companies, Rochester, N. Y.

17. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York, N. Y.

29. Guide to Better Packing and Shipping Methods—32 page booklet with useful information regarding binding, packing, sealing and car-loading. Issued by Signode Steel Strapping Co., 2620 N. Western Ave., Chicago, Ill.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Aluminum Paint—The Coat of Metal Protection—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. Flooring, Open Steel, Area Gratings and Steps—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

35. Seating Equipment—Automatic, adjustable, ten inch height adjustment, all steel, mill and factory seating specialty, illustrated booklet, ten pages. Vitek Manufacturing Company, Omaha, Nebr.

36. Hosiery Inspection, Seamless and Full Fashioned—Illustrated folder. Also describes new Leg Examining Machine for full fashioned ladies' stockings. Edward R. Ammon, Reading, Pa.

40. The New Competition in Color—20-page illustrated booklet. Discusses future trends in business and their significance, present trend toward fast colors in textile industry and opportunity this trend offers for increased profits if properly utilized. By Franklin Process Co., Providence, R. I.

41-A. Arizona Pima Cotton—Origin; planting, irrigation, picking, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

41-B. Sudan Cotton—Growing districts; irrigation, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

42. Factoring—Booklet, 11 pages. Summary of Factoring Service provided for Manufacturers of Textiles. By Textile Banking Company, 50 Union Square, New York, N. Y.

43. The Key to Atlanta—Booklet, 48 pages. Illustrated. Industrial information regarding Atlanta. By Industrial Bureau, Atlanta Chamber of Commerce, Atlanta, Georgia.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

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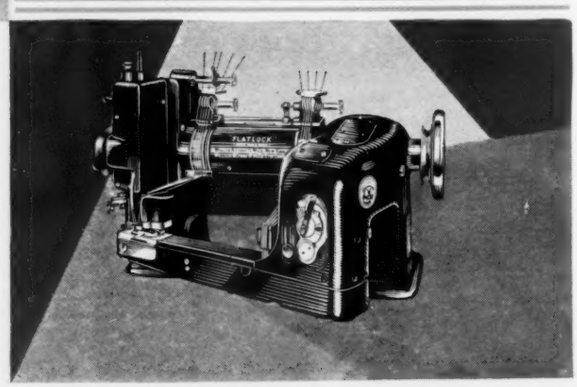


PRESS-OFFS *in* Full-Fashioned Manufacturing

By C. H. Baxter

THIS IS the second article of Baxter's current series on full-fashioned work. In it he discusses the causes of press-offs, from the kind of silk used, through the winding, and knitting, and offers suggestions for preventing them.

Then he gives the results of his experience as to the best ways in which to reclaim or dispose of press-offs after they are made.

The next article, to appear in the April issue, will discuss needles, narrowing points and welt hooks.

PRESS-OFFS in the manufacturing of full-fashioned hosiery is probably one of the greatest problems connected with the manufacturing end, as a large number of press-offs result in the increase of waste, loss of production, which cause a loss in profits. Every manufacturer of full-fashioned hosiery has this to contend with and every means known is usually taken to reduce this item.

Press-offs, of course, will never be eliminated in the manufacturing of full-fashioned hosiery, but by careful supervision and checking a reduction of press-offs can be made and it is only by investigating the causes of hosiery pressing off the knitting machines, that this can be reduced.

Slubs and Knots in Yarn.

Press-offs are caused by many things and the principal causes are slubs and knots in the yarn, poorly wound cones, roughness or cuts in the various tension parts and carrier tubes or improper threading of yarn. Other causes are mechanical, such as needles breaking, cutting the fabric, carriers not set properly or narrowing trouble. Another cause, which increases the number of stockings that must be backwound but cannot be classed as press-offs, are pull threads and stockings spoiled in the looping and seaming operations.

In endeavoring to reduce the number of press-offs made in any mill, I might state here that the knitter is the one that should give the owners or the supervisors the most assistance. The trouble I have found with many knitters is that instead of looking for the cause, whenever a press-off occurs, they just become angry, blame everything else but the right cause and never bring the matter up for investigation.

In this article I will try to show those interested how many press-offs can be eliminated by getting to the bottom of the causes and stopping the cause for such press-offs.

Poorly Wound Cones.

First, the principal cause for press-offs is slubs and knots in silk and poorly wound cones. Where manufacturers are making hosiery out of the silk wound on cones as received from the throwster or what is called dry package knitting, the matter of slubs and knots can only be stopped by having the throwster improve his winding. The average throwster today is making every effort to produce good winding and if one does receive poor winding, then the throwster should be notified at once. Practically all throwsters have a system of putting a sticker in the inside of the cone, showing the number of the operator, who has done the winding and by giving this information to the throwster from whom this silk was purchased, it will be very helpful in securing better cone winding.

If anyone is doing backwinding or making hosiery from what is called a wet package, then bad winding should be investigated in the cone winding departments. All cone winding machines have an attachment called a slub catcher and it is in the setting of this slub catcher that slubs and long knots can be caught and taken out before the yarn is delivered to the knitter.

The setting of these slub catchers should be such that a plain ordinary knot will just about go through these slub catchers. Do not set slub catchers too close, as this causes the chafing of the yarn and results in broken ends or filaments and forms what are called caterpillars.

However, the slub catcher is not the only place to look for things that cause press-offs. All guides or parts where the yarn runs over or through should be checked to see if they are nicked or cut, and if so should be replaced or repaired at once.

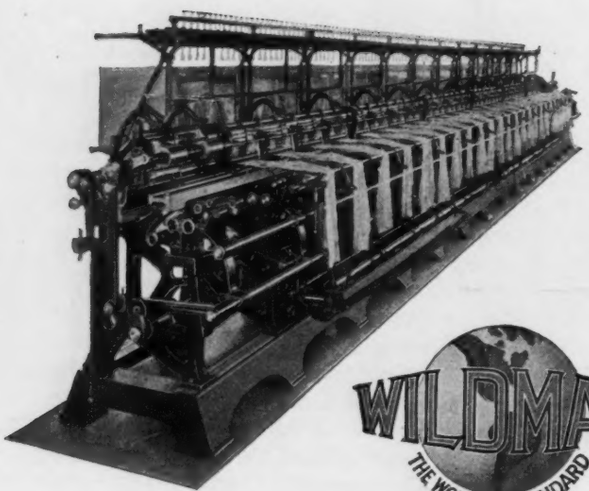
Care Necessary in Winding Operation.

The operator of a cone winding machine should also be very careful to see that all ends of knots are cut short and, when trying a knot, should be sure that the knot is pulled tight so that it cannot slip out when going through the tensions on a knitting machine. The operator should also see that the hands are free from loose ends or threads and that loose ends are not hanging on their clothes and anywhere on the coning machines. Loose ends will fly into the cones and this is one of the causes of press-offs on knitting machines.

In cone winding one should see that the tension on the yarn is even and not too tight so as to produce a soft wound cone. A hard cone, especially when wound hard on the nose of the cone, causes the yarn to stick and this causes holes and press-offs when the yarn is used in knitting.

The next cause for press-offs lies in the tension and mechanical operation on a knitting machine. Many press-offs on a knitting machine are due to improper threading through the felt cups, rings and snappers. A knitter should always check the threading of these

A child learns to put the heavy blocks at the bottom



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parts when a stocking has pressed off. Any nicks or cuts in these parts will cause press-offs and these should be examined periodically. One should, especialy, examine felts and porcelain eyes in the felt cups and snappers to see if the porcelain has been cut by the yarn.

Causes on the Knitting Machine.

One thing that will do more to cause press-offs on a knitting machine than anything else, is when the bottom of carrier tubes are cut or nicked. This is something again that a knitter should look after, especially if stockings are pressing off for apparently no cause whatsoever. The constant repairing or replacing of carrier tubes is very necessary in any full-fashioned hosiery mill, if press-offs are to be reduced. My experience in the matter of carrier tubes has shown me that the average knitter will neglect this because of the trouble connected with taking off a carrier and placing it back again, after a new tube has been put into it. Most knitters take off carriers at times when it is unnecessary because they believe they must take it off to see if the bottom of the tube is cut. In the training of knitters, I have always educated the apprentices to have a small mirror in their tool kit, and whenever they think that the carrier tube is cut and is causing press-offs, they can save the time of taking off a carrier by placing the mirror underneath the bottom of the carrier tube, and the bottom of the tube will reflect into the mirror and show the knitter the condition of the carrier tube. This is a simple way to examine carrier tubes on a knitting machine and will save loss of production, due to the fact that if the carrier tube is not cut, it is not necessary to take off the carrier to find this out.

Such things as cuts, holes and needle breakage and narrowing trouble are usually mechanical troubles and this should be rectified at once, so that the knitter will not have to press-off stockings that are spoiled because of these defects. Here again the knitter should either fix these things himself or tell the person in charge of fixing, as soon as the trouble occurs, so as to reduce press-offs made in knitting.

As one can see, it is the knitter who is the one who should not only notify those in charge of the winding trouble that is causing press-offs but should also do everything possible to reduce press-offs due to mechanical trouble by having same fixed. He is the man who operates the knitting machine and he is the one that should be held responsible fort he amount of press-offs that are made on the machine he is operating.

All the things I have written about, however, will not result in a reduction of press-offs, unless a continual campaign is made to keep down the number of press-offs. I have found that the best method that can be used for finding out the number of press-offs made over any given period of time is by what might be called a Press-off Record Card. This record card is given to each knitter and as press-offs are made, he will mark the press-off on the card and also mark if it was due to silk or mechanical trouble. Of course, one must rely entirely on the knitters for the correct information on the record but I find that most knitters realize that the record is kept for their own good, as well as for the company's good and that only by recording accurately the number of press-offs, will the winding be improved and their mechanical troubles fixed. This Press-off Record Card is shown in the accompanying illustration.

Using the Press-offs.

The next problem that every full-fashioned hosiery manufacturers has in reference to press-offs is how they can be either used again or backwound without too much loss of material and waste.

Here again the knitter should be the one to help in disposing of press-offs. Whenever the knitter has a stocking press-off on the knitting machine, he should see that another stocking is topped on in its place. He should also at times, if his press-offs are accumulating, throw out two or four bars a set at the start of making a set of hose and top on press-offs on these bars at the point where the entire set has knitted the length of the press-offs to be topped on. In topping press-offs, the question will arise as to what should be topped on and how much yarn should a knitter waste in topping a press-off.

In topping a press-off the knitter should never top a stocking that will make more than one inch of

PRESS OFF REPORT

PERIOD ENDING FEB 15 1930

KNITTER JOHN SMITH — LEGGER X

MACHINE Nº 6 — FOOTER

DAY OF WEEK	SILK						COTTON					
	3THD	4THD	5THD	6THD	7THD	8THD	50/2	60/2	70/2	80/2	90/2	100/2
MON			///					/			//	
TUE			/								/	
WED			////					/				
THU								//			///	
FRI			//					/			//	
SAT			/								/	
TOTAL			12					5			9	
MON			///					///			/	
TUE			//					/			//	
WED			///								////	
THU			/					//			//	
FRI			//					//			/	
SAT			//					//			/	
TOTAL			14					10			//	

OTHER CAUSES //// /////

TOTAL PRESS OFFS

MATERIAL

SILK 26 — COTTON 35

OTHER CAUSES 10

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The
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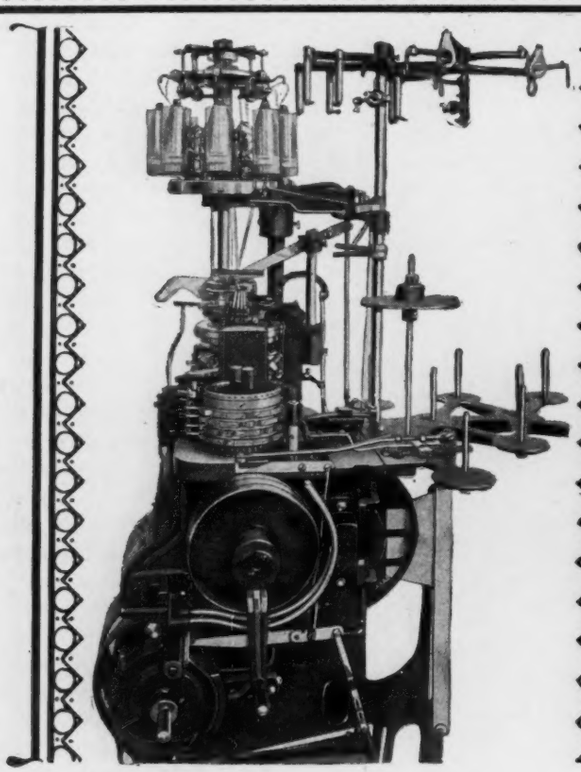
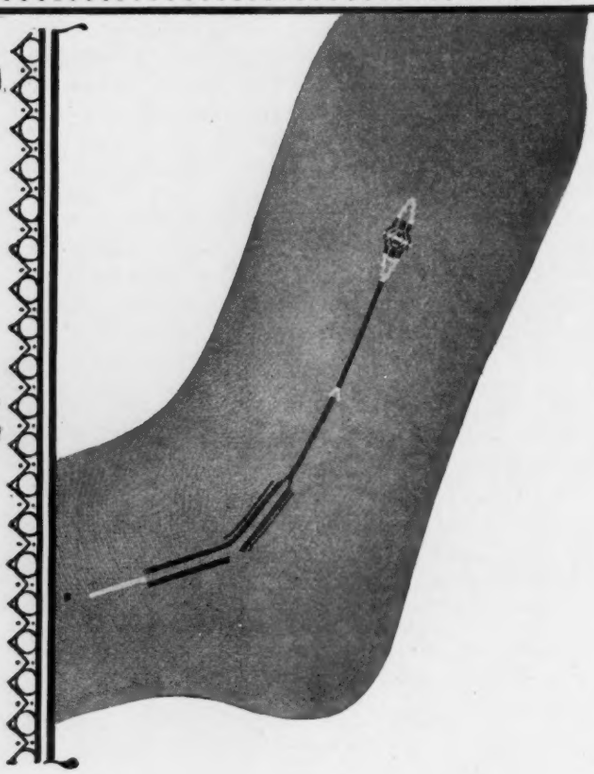
WRAP-STRIPE MACHINES





SELL the added beauty of two color effects produced by the Banner FULL AUTOMATIC WRAP-STRIPE Machine, with the two color wrap-stripe attachment.

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AUTOMATIC KNITTING MACHINES

Baxter Says—

CUT CARRIER TUBES cause a lot of press-offs through neglect. "I have always educated apprentices to have a small mirror in their tool kit, and whenever they think that the carrier tube is cut and causing press-offs, they can save the time of taking off a carrier by placing the mirror underneath the bottom of the carrier tube, and the bottom of the tube will reflect into the mirror and show the knitter the condition of the carrier tube." This eliminates the necessity of taking off the carrier—a lot of trouble —to see if the tube is cut.

knitted fabric waste, unless the press-off is one that has pressed off or was spoiled in the leg narrowings. In this case the press-off should be topped on just before the leg narrowings are being made. Stockings spoiled in the splicing or both heels should be topped on just before the beginning of the splicing. When only one heel is spoiled, this stocking should be topped on in the heel and at times two stockings, one with the left side of the heel and one with the right side of the heel spoiled, can be topped on a single needle bar, thereby making two perfect stockings on one needle bar. All other stockings should be topped on by stopping the machine at the length of the press-off and topping on the press-off at this point.

Next in the matter of press-off, will come the question of what press-off should be backwound to salvage the yarn and also if it is better to backwind or top on press-offs.

I want to say to the readers here that my experience in press-offs and how to dispose of them has shown me that backwinding press-offs to salvage the yarn is a very costly operation and that it is always better to top all stockings possible rather than to backwind. In backwinding press-offs, when one considers the slow method that has to be used and the waste made, the cost will run a dollar or more a pound, depending upon the wages paid for an operator. One must also admit that yarn knitted from backwound press-offs will not produce as many first quality stockings as yarn that is being used as received from the throwster. Of course, some backwinding must be done by every manufacturer of hosiery but I am sure that if anyone will study the costs of backwinding and compare it with the cost of topping, that they will find that it pays well to do all the topping of press-offs that are possible to be topped.

In the topping of press-offs, one must also use proper methods to avoid waste, otherwise this will also prove costly. The average knitter, as a rule, is very careless in reference to making waste and many times will unravel a great deal more yarn than is necessary when getting a stocking ready to top on. The only way that I have found that excessive waste can be stopped in topping is to make a daily collection of press-offs from each knitter. This also includes stockings spoiled in the footing operations and the grey finishing operations. The press-offs are then examined and sorted and all stockings that can be topped on, placed at one side and the stockings that must be backwound are given to the operators who do the backwinding.

The stockings to be topped are then sorted as to the point where they can be topped and then are given to the knitter to top.

The sorting of press-offs for topping are made as follows:

Bundle No. 1. Stockings that can be topped between welt and first leg narrowings.

Bundle No. 2. Stockings that can be topped before the first leg narrowing.

Bundle No. 3. Stockings that can be topped after the last leg narrowing.

Bundle No. 4. Stockings that can be topped before splicing.

Bundle No. 5. Stockings that can be topped in heel. The knitter is informed that these stockings given him must be topped that day and if in one of the bundles the knitter has enough press-offs to top an entire set, he must do so.

By this method press-offs are cleaned up daily and by sorting the press-offs for the knitter much waste is saved. It is best to have each knitter top his own press-offs and the sorting is done on the number of press-offs taken from each knitter and returned to him, after they are sorted. This method also helps in production, as the knitter wastes no time, looking for a press-off to top at the proper place and prevents the possible chance of a stocking being topped that has a flaw or defect in it.

In backwinding, the best method to use is the coning machine, as these machines are speedier and more backwinding can be done on them. I find it advisable not to run the yarn through the slub catchers when backwinding, to save the trouble of excessive yarn breakage.

Another problem that arises in connection with the yarn that has been backwound from press-offs is how to take out the kinks in the yarn. In this case I might say that the best method to use is to run the yarn over an emulsion roll when backwinding and see that the roll revolves at a speed to make the yarn quite wet. However, if one has a conditioning room with a humidifier in it, the placing of the cone in this room for several days will take out the kinks so that the yarn can be used again on a knitting machine.

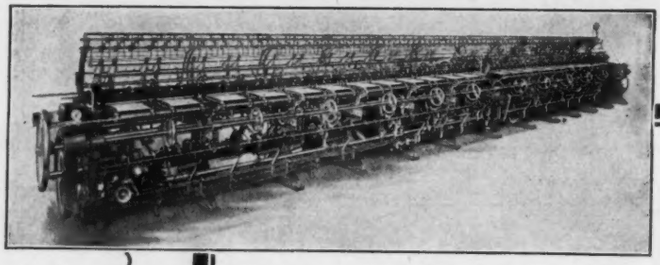
As anyone can see, the matter of press-offs in a full-fashioned hosiery mill is a problem that must be looked after, if one wishes to operate on a profitable basis and it is only by a systematic method that losses caused by press-offs can be reduced.

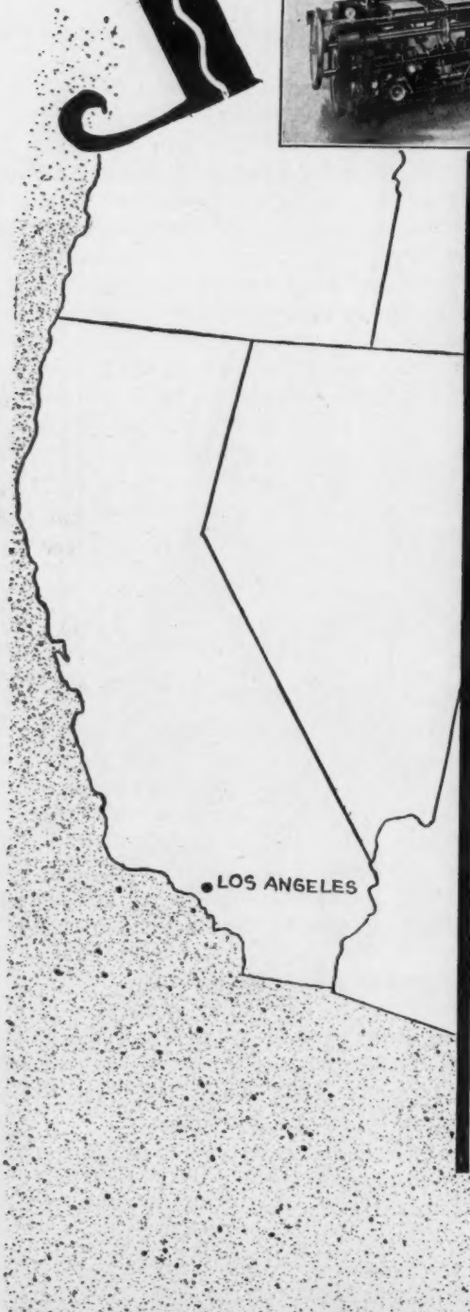
I therefore urge full-fashioned hosiery manufacturers not only to watch press-offs in hosiery manufacturing but also to dispose of them as fast as they accumulate.

Press-offs mean waste and as waste eats into the profits, this is one item that must be watched and checked, if one wishes to be successful in the full-fashioned hosiery business.

[This is the second article of Mr. Baxter's current series on full-fashioned manufacturing. The next article will appear in the April issue, and will discuss needles, narrowing points, and welt hooks.—The Editor.]

SCHUBERT AND





From Truro To Los Angeles

THIS map shows the distribution of the many thousands of Schubert & Salzer Full Fashioned Hosiery machines throughout North America. This is the best means we know of bringing to your attention the wide-spread use of these machines.

"Such popularity must be deserved"—to quote from the slogan of a well-known national advertiser. Apply whatever test you will to Schubert & Salzer machines. Production—the maximum. Quality—the best obtainable.

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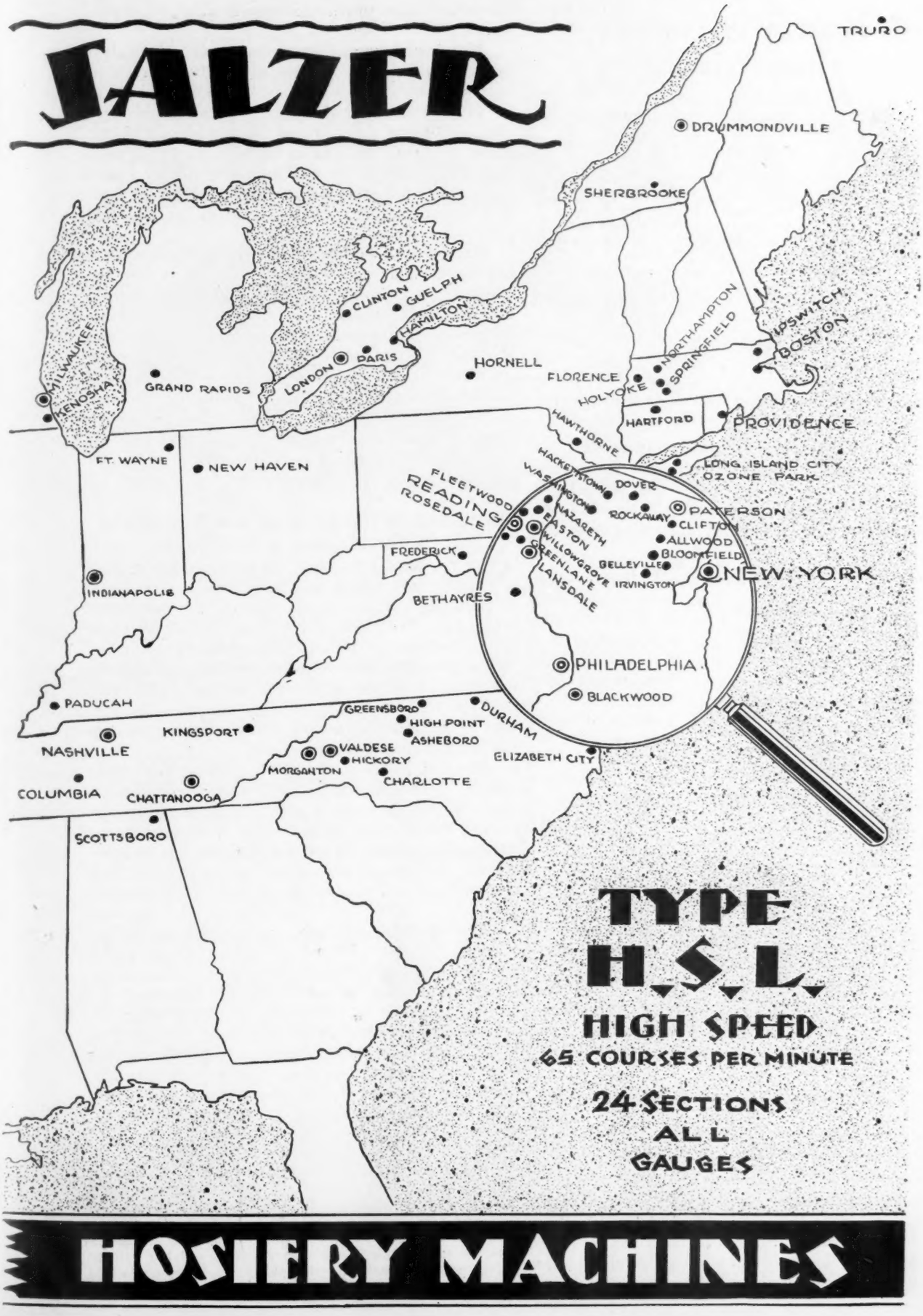
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65 COURSES PER MINUTE
24 SECTIONS
ALL
GAUGES
HOSIERY MACHINES

A History of Hosiery Inspection

By Edward R. Ammon

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PART FIVE

THIS is the fifth of a series of articles on "The History of Hosiery Inspection," by Edward R. Ammon. The first article appeared in the August number, the second in the September issue, the third was in November, 1929, and the fourth in January, 1930. Subsequent installments will appear in later issues.—The Editor.

THE HOSIERY BUSINESS may not be able to prove that the world is getting weaker and wiser, but it positively has proven that business men of today see the far reaching value of honesty in giving a customer merchandise that is as represented.

A generation ago, and in some instances much later, any person thoroughly experienced in hosiery merchandising, knew that he could take almost any box of stockings and on careful examination find one or more pairs that had small unmended holes in them.

They had always been that way, so there wasn't much objection to it. Stockings, both seamless and full-fashioned, were mostly cotton and when a purchaser noticed a defect, the wife or mother mended it. Very little thought was given to the fact that they had paid for perfect merchandise and should have received it.

Insisted on Perfect Merchandise.

The cotton didn't get runners and at the best, the defect was of minor importance. Long skirts and high shoes kept hosiery hidden and the long-lived cotton stockings served their purpose very well even when much mended.

Gradually, as woman became emancipated, she developed entirely original modes of dress when compared to previous periods. Instead of the modesty of her grandmother's dress, she commenced to display her charms.

First, her shoes dropped from high to low walking shoes.

This was accompanied by a demand for something a little better than the blotchy appearing cotton stocking which had been almost universally worn.

Mercerized stockings commenced to be demanded. Due to the higher luster and the fact that the two threads divided and largely eliminated the blotches, the mercerized stockings and low walking shoes were one of the first of a series of changes in female attire which seem to become more startling each season.

With low shoes and mercerized stockings displaying ankles, the quality of hosiery had to improve all around.

Two hundred-needle seamless machines were changed to two hundred and forty needles. Thirty-three gauge full-fashioned hosiery machines were changed to thirty-nine and thus was started a mad competition for startling results. One season's effort seems mild and commonplace to the one that follows.

Hosiery was brought into the limelight with a brilliance never before attempted. Its quality became of tremendous importance. Fineness and thinness increased by leaps. More and more manufacturers commenced to feel the ire of customers who had received defective hosiery. There came to be absolute insistence that when the price was paid for today's frail product that perfect merchandise be received.

As a result an entirely new selling feature in merchandising hosiery began to be recognized.

That was the attempt on the part of manufacturers to sell perfect hosiery.

Scott and Williams Announce New Model K for Making a New Toe.

SCOTT & WILLIAMS, INC., 366 Broadway, New York City, have placed on the market a new Model K plain and spiral hose machine for the making of a new toe. The special features are the elongation of the narrowings of about 25 per cent over the narrowings of the older or regular type toe, the manufacturers state. This feature narrows the toe so that there is less material or bulk at the end of the toe. The surplus of material that is now in the ordinary seamless toe is eliminated, it is pointed out.

To avoid the toe portion of the stocking from being exposed beyond the vamp of a particularly low-cut shoe, the machine is arranged to knit the upper portion of the toe with the same yarn as is used in the instep, thus permitting the use of a different or heavier yarn for the end portion of the toe to reach back well to the ball of the foot where the wear is the hardest.

The looping or seaming for closing the toe on this stocking is placed underneath instead of on the top or the instep portion of the stocking.

Part way along the narrowings and in between the narrowing and widening for the formation of the toe a gusset has been knit, to beautify the stocking and do away with the unsightly lumps or so-called dog ears at the beginning and ending of the narrowings. The machine is being offered in gauges as fine as 340 needles, 3½ inches diameter.

Discharge Printing On Celanese.

The Lyons Piece Dye Works, Paterson, N. J., recently announced that they are now ready to quote commercially on discharge printing of all-Celanese fabrics, mixtures of Celanese and rayon and Celanese and cotton. On the all-Celanese group, they report ready to quote on white discharges on grounds of black, navy, brown and red. In the mixtures, white and any color patterns may be discharged on any color ground.

AROUND THE SEASONS WITH TORRINGTON LATCH NEEDLES

FEBRUARY ALMANAK

1930 Feb. hath 28 days 2nd mo.

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Yet reigns a sovereign king;
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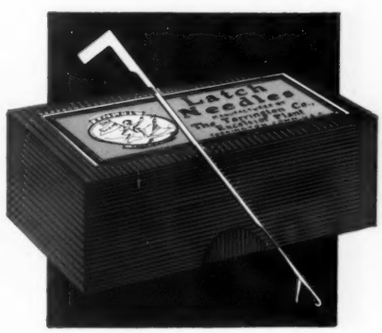
This factor in the sales situation makes it imperative to use good needles. Torrington Latch Needles meet every requirement.

Torringtons are the efficient result of years of specialization in precision manufacture. They are uniform, finely tempered, smooth . . . so knitters all over the world prefer them.

Also manufacturers of Torrington Full Fashioned Needles, used to obtain greater production and better production.



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Durene as manufactured by the American Yarn and Processing Co. is spun from carefully selected long staple cotton. Special processing increases its durability, elasticity, absorbency and its affinity for dyes. Investigate *Durene*, the *durable* yarn with the subdued *sheen.*

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KNITTING KINKS

PRACTICAL DISCUSSIONS BY COTTON'S READERS ON VARIOUS KNITTING SUBJECTS

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

What is Proper Number of Courses Per Inch?

EDITOR COTTON:

There has been a difference of opinion among our machinists as to what they would consider the proper number of courses per inch in a hose made on a Scott and Williams Model K 3½-inch 260-needle machine. 70s/2 mercerized being used in hem, 8-thread silk in boot and foot and 80s/2 mercerized in heel and toe.

Our idea in producing this hose is for the good appearance of the finished product, so in order to obtain this we must draw as tight a stitch as is possible and still get the elasticity necessary.

I should like to hear from others who have made this type of hose, as to what they consider the proper course per inch in each part of the hose, also including the number of chain links used so that we can be governed accordingly. The courses per inch on other numbers of yarn would be helpful also.

CONTRIBUTOR NO. 4616.

Causes of Tuck Needles Bending Latches.

Here's another one where most everyone seems to agree, but you will find all of the comments interesting.

EDITOR COTTON:

In a recent issue, "CONTRIBUTOR NO. 4586" states in a question that they are running 3½-inch 260-needle Scott & Williams machines and are having trouble at times with a tuck stitch getting the latch bent. By this I take it that he means either of the two fashioning needles which are placed at the back of the stocking for making this tuck stitch. He also states that the latch gets bent just back of the spoon of the needle and when the machine starts doing it, it will bend the same needle every time, but not both of them.

Bending of the latches on these tucking needles is a common difficulty on a Scott & Williams machine, but it can be remedied very easily.

On the Scott & Williams machine, I have always used Torrington needles for this purpose. This company has two needles with which I am familiar, for the purpose of making these tuck stitches, No. 94 and No. 97. The No. 94 tucking needle has a latch which is a trifle longer than the latch of the No. 97. Your reader probably knows that on each side of the tucking needles are two special sinkers, made especially for this particular trouble, for if the regular sinker is used, breakage will result every time, and this is one of the main sources of the trouble.

I am illustrating the difference in the two sinkers in the accompanying sketch, Fig. 1. The solid lines show the outline of the regular sinker, while the dotted lines indicate that the tucking sinkers are cut out at that point. I wish to state here that if one tucking

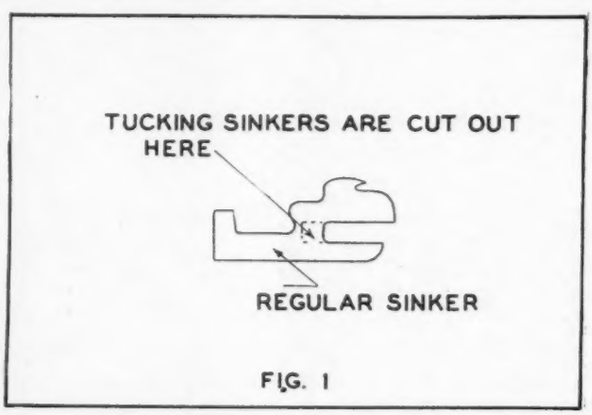

FIG. 1

sinker and one regular sinker are used on each side of the tucking needle, this trouble will result just the same. Both sinkers must be the sinkers with the cutout, which are furnished by the machine manufacturers especially for this purpose.

If the reader is using the No. 94 needle I would suggest that he change to the No. 97, as the latch on this needle is sufficient to make the necessary tuck on this type of hose. The shorter the latch the better. These two things—the needles and the sinkers—are the two main causes, although there are other causes which I will mention.

A man should be certain that the outside sinker rings are not loose, as this will cause the sinkers to pull to one side. If a brush is used on the machine,

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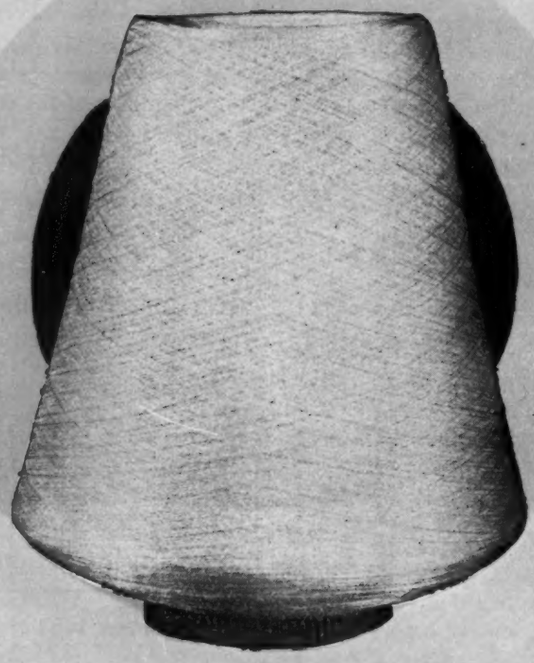

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care should be taken that the brush is not riding hard on the sinkers.

There is a relation to this trouble in the actual making of the tuck stitch, and I would refer any readers having this difficulty to "Knitting Kinks Hand-Book No. 1" which is published by COTTON and furnished with subscriptions to COTTON, to the two articles, "Fashion Marks" on page 20 and "Fashion Marks on Hem Transfer," page 36. Inasmuch as this man and other readers might be interested in seeing this, and might not have copies of this book, I am taking the liberty of quoting these two sections of the booklet in full:

Fashion Marks.

The section on fashion marks reads as follows:

"If the fashion marks are dim on one side only, this trouble can be generally overcome by bending the latch of the fashion needle out slightly. However, this should be done only as a last resort.

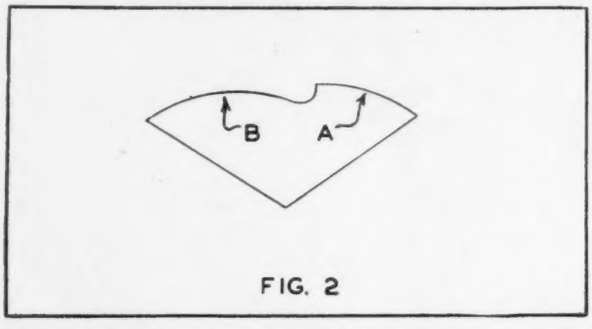

FIG. 2

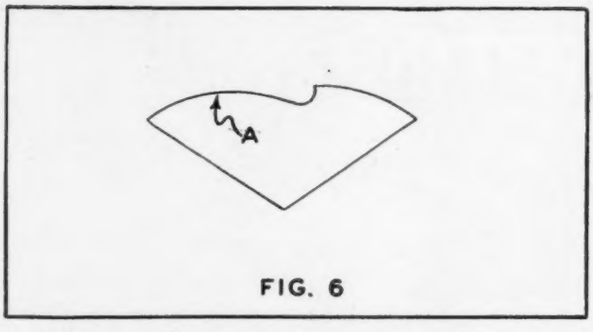

FIG. 6

"If the fashion marks are dim on both sides, the trouble is generally due to the stitch being too tight. If the foot will not stand loosening, then the trouble is with the right-hand stitch cam not getting a full throw when on the fashion marks. The stitch cam might be sticking, thus not dropping quickly enough. The foot should be loosened up a little.

"The following point is important in connection with fashion marks: Take the machine through by hand when on the fashion marks. As the cam drops, all of the points shown as *A* and *B* in the accompanying illustration, Fig. 2, should be the same height. If point *A* is higher than point *B*, grind a little off of *A*. If point *B* is higher than *A*, take a little off of *B*. Before grinding any off of *A*, it must be taken into consideration that the right hand up-take has to fit in the slot of the stitch cam, so if too much is taken off, the picker must be adjusted to fit into the slot of the cam. Before grinding any off of *B*, care should be taken that when the cam drops it is not hitting on top of the lower center cam, thus not letting it get a full throw. If this is all right, then take a little off of *B*, but take into consideration that *B* must bring the needles high enough when going through the hem to clear the latches of the fashion needles, otherwise, fashion marks will result at the hem transfer. Understand this clearly.

"If fashion marks are left out in various places the trouble is due to the fashion mark catch No. 5363 not snapping back into position, after it has made its upward stroke. Then, when making the next throw the fashion catch not being under the fashion mark link No. 9090 it does not get a full throw, resulting in the fashion marks being left out. To remedy this, readjust the fashion mark link upward so that it just snaps back under the fashion mark catch No. 5363. The fashion mark catch might be binding."

Fashion Marks on Hem Transfer.

The section discussing fashion marks on hem transfer reads as follows:

"The common cause of this trouble is a burr on the end of the fashion needle, which does not allow the stitch to be cast off when going through the transfer. The remedy, obviously, is a new needle.

"If the inside and outside of the welt are knitting too loose, the welt should be tightened.

"Sometimes the stitch cam operating rod splits where the screws hold it to the bracket, which results in the stich cam not being held up to its proper height. If this develops, a new rod should be put in.

"When the two screws which hold the right-hand stitch cam become loose, the cam is not held up to its proper height. If this is the case, the screws should of course be tightened.

"If the right-hand stitch cam does not raise the needles high enough on the point *A* in the illustration Fig. 6, the latches of the fashion needles, being longer than the others, will not cast the stitch off the fashion needle latch, resulting in a tuck stitch. A stitch cam should be substituted which raises the needles as high as possible without having the butts of the needles coming in contact with the right point of the back center cam, which will break them off."

The foregoing quotations from the book referred to may be of general interest in this connection.

Referring again to the particular difficulty mentioned by "CONTRIBUTOR No. 4586," I would like to say in closing that an extremely tight stitch in any part of a stocking of this type is a possible source also of this trouble. CONTRIBUTOR No. 4593.

Du Pont Rayon Releases Interesting Statistics.

The Du Pont Rayon Company recently announced that their 1929 production totaled 24,500,000 pounds, their sales 22,800,000 pounds, and that their estimated production for 1930 is 27,000,000 pounds. The percentages as to sizes used were: 150 denier, 71 per cent; 300 denier, 11 per cent; and other sizes, 18 per cent. The percentages of regular and super extra yarn were: regular, 74 per cent; super extra, 26 per cent. The percentages consumed in various fabrics were: underwear, 36 per cent; hosiery, 23 per cent; other knit goods, 2 per cent; cottons, 18 per cent; silks, 16 per cent; braid, 2 per cent; and miscellaneous, 3 per cent.

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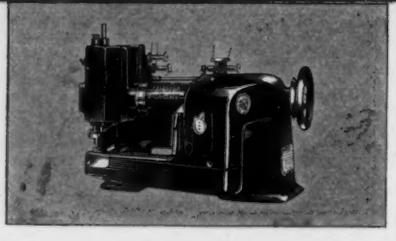

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Dyeing Rayon Hose With Mercerized Top, Heel and Toe.

EDITOR COTTON:

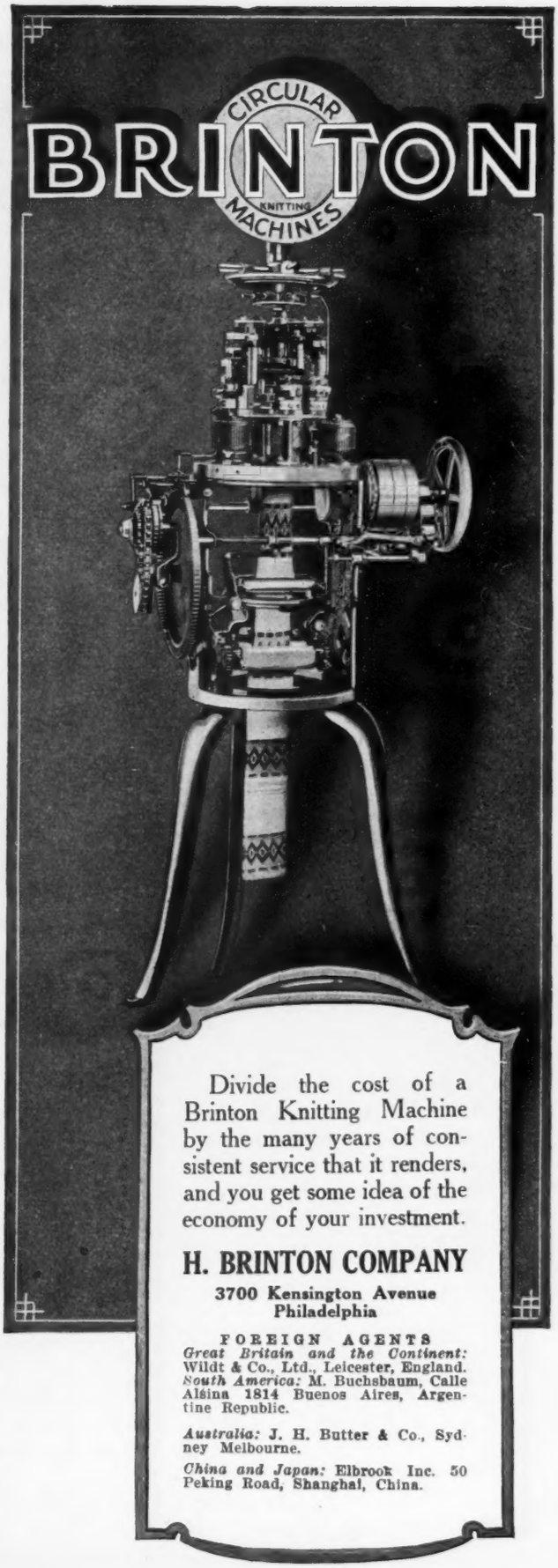
Many carefully made dyeings of rayon hose are spotted and streaked due to careless preparation of the material before it is dyed. This is the most important part of the operation and if we don't start off right, it is useless to expect to end up right. Therefore, we should get on the right track at the beginning.

As most of us probably understand, rayon hose has winding oil on it when it is knitted into the hosiery. This oil was used to assist in winding at the plant where the rayon was manufactured. Some manufacturing plants use greater percentages than others. The average is from four per cent to six per cent winding oil. Different kinds are being used, so the dyer will have to look out for that. Usually he can write to the manufacturing plant and get correct figures on this. Then he can tell just what he is up against. I have had experience with several different kinds of rayon, made at different plants with different winding oils, so I am able to talk from experience on the subject. I am with a mill where we make rayon hose, and it is my job to dye this hose and dye it right, which consists of good level dyeing and a good union on the rayon and mercerized. Some dyers may use oils of various kinds to boil off, but my best method is soap and soda ash, or concentrated ash, using three per cent good olive soap and 1½ per cent concentrated ash. The following is the operation I use:

I always dye rayon hose in dye nets, which are the same as laundry bags. The dye nets are usually made in sizes of 34x23 inches. I put four dozen pairs to a bag, which does not crowd the bag, but, at the same time, makes it snug enough. After having enough sacked up for a batch to be dyed, I load the dye machine, being careful not to load it too full, but allowing it to be snug enough to prevent any idle space in the machine. The goods will tangle if there is space in the machine that is not filled. However, having the sacks too full and the dye machine too crowded will cause uneven dyeing on both the tops and legs of the stockings.

I next run water in the machine until it is nearly filled and add three per cent soap, along with 1½ per cent of concentrated ash at a temperature of 120 degrees F., which solution should have already been boiled up in a barrel, especially for this use. I then raise the temperature to a boil and boil twenty minutes. After this I draw off the boil bath and rinse one time in clean hot water. The stock is now ready for the dyer. The dyeing process is as follows:

The water should again be brought up to a temperature of 120 degrees F., the dye added, and the water slowly brought to a boil—about 20 minutes should be the amount of time required to bring the water to a boil. After it has been brought to a boil, it should be boiled for 45 minutes, but very slowly. Then when it has boiled the full time, a sample of the batch should be made to see if the shade is correct. If the shade is O. K., the dye bath should be dumped and fresh water at a temperature of 120 degrees run in for thoroughly rinsing the stock. The goods should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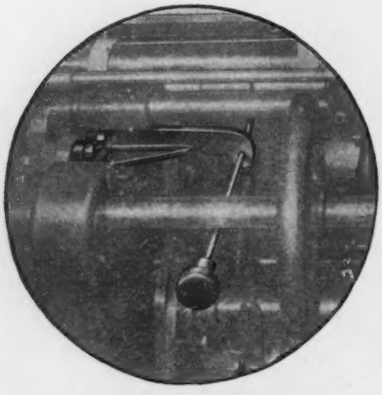
Seven Outstanding Advantages of the NEW READING DRIVE



High-Low Speed Control Rod

1 Motor runs uniformly and maintains its high initial torque at all speeds regardless of load so that no difficulty whatever is experienced when starting the machine in any position.

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4 Has a large speed range and is easily and quickly adjusted to any speed between 600 to 1600 r. p. m.

5 It is highly efficient, the efficiency remaining practically constant over its entire speed range.

6 Makes it impossible for knitters to change the speed limit.

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Thus it is easily seen that the adaptation of the new Reading Drive to the full-fashioned knitting machine is one of the most important developments ever made toward the production of quality fabric at an economical speed.

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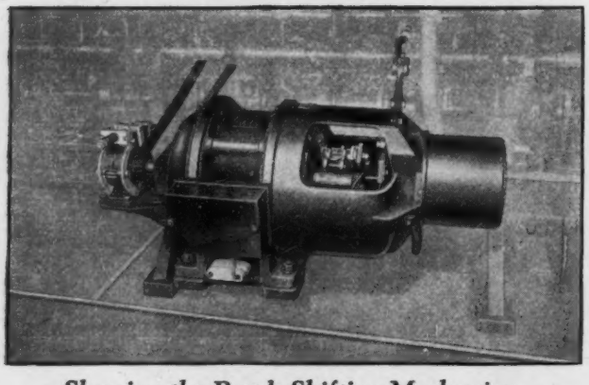
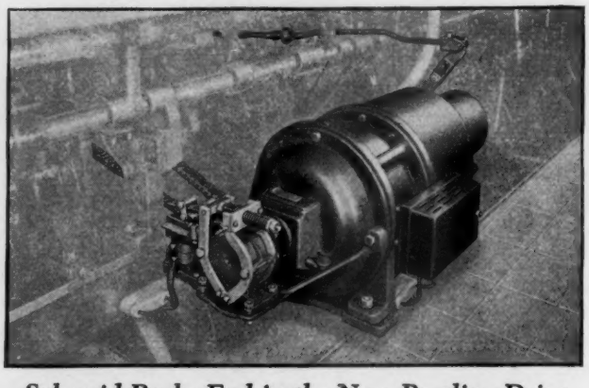
READING, PENNA.



Showing the Brush Shifting Mechanism



Solenoid Brake End in the New Reading Drive

The "READING" Full-Fashioned Knitting Machine

be softened with some good softener oil to make the rayon good and soft, and also to prevent the goods from drying out so quickly. Softening will also help the boarders. When the goods have been softened, they should be taken out and extracted, but not extracted too much, for this material should not be allowed to dry before boarding. The goods should be boarded as quickly as possible after they have been extracted.

Last, but not least, great care should be taken in handling rayon hose, in handling and boiling also. And for the sake of emphasis let me say again, do not boil too hard.

It makes no difference how many dyes a dyer has made, he always gets a thrill out of a batch well dyed, having a good union and a good level shade.

CONTRIBUTOR NO. 4656.

Reclaiming Half-Hose Ribs, Waste, Etc.

A compilation of practices among leading southern mills in reclaiming and disposing of ribs and waste.

RECENTLY, we had occasion to make some interesting investigations with reference to the practices of different mills manufacturing half-hose as to their methods of reclaiming waste, ribs, etc. There is of course, quite a difference of opinion and method with regard to handling this phase of half-hose mill work, and it is therefore felt that a description of some of the methods encountered in this investigation on the subject will be of interest.

One prominent group of mills, manufacturing men's hosiery, have the following to say on the subject:

"Assuming that the regular transfer ribbed top is used, the imperfect tops, if made on single feed ribbers, may be back wound and re-knit; or the imperfect tops may be sewed on low end feet with proper length legs for a cheap type of half-hose. These tops can also be disposed of to glove manufacturers for cuffs. The next best use for the seconds of ribbed tops is either to sell them to the waste dealers or ravel them out for wiping waste for the machinery and automobile trades. This applies to tops that are culled out before knitting.

"After knitting, the tops that are on feet which are no good from the knitting machine, may be cut off and used as outlined.

"The waste from the knitting machines may be recovered in varying degrees through the sewing and mending processes for low end merchandise, and some types can be back wound, but ordinarily this is not practical and does not pay on half-hose. After reclaiming all of the waste possible, that will make low end half-hose, what is left is available for waste in varying degrees and worth more or less, according to the extent the different grades of yarn used are separated for disposition to waste dealers. For example, a number made of cotton tops, heel and toe, and rayon body, is worth more for waste after the top, heel and toe are cut away from the rayon, so that the rayon waste can be sold for one item, and worth considerably more than the cotton waste sold as another item.

"These different classes of waste are taken by waste concerns and converted into short staple and used for spinning low end yarns or mixed yarns where part waste and part virgin staple is used.

"Another use for the hosiery scraps, which has not been given much attention, owing to the difficulty involved, is disposing of these scraps to individuals for making quilts, dolls and other novelties. This has not been developed to the extent that the rug business had been developed in using hosiery or other knit goods waste.

"In our experience, it has been found to be most satisfactory to reclaim waste for low end goods only up to the point of making a profitable, salable hose, and the rest of the waste, if in sufficient quantity, is kept separated according to classes and disposed of through the best paying outlets."

Another well known manufacturer admits that while he has pretty accurate data from all other departments of the mill, information as to the reclaiming of machine press-offs of half-hose, ribbed tops, etc., is scanty.

The principal operations which he describes in this connection are: the sewing up of socks that with a seam or two will pass for "thirds" or "fourths"; the cutting off of the ribbed tops from such socks as cannot be sewed up, and raveling these ribbed tops down preparatory to back winding; and the job of back winding on a winding machine which is equipped especially for this work.

He continues: "The reclaimed yarn for tops is knit again into good ribbed tops. Some of the socks sewed up are dyed, especially where the process of cross-dyeing will bring out brilliant colors, and some are sold without being dyed—just in the bundle of 24 socks to the bundle, care being taken to have two socks of a kind used as a pair. We disregard the matter of size in this class of goods. There is an outlet for this material at a price that allows some margin of profit over the price that could be obtained for scraps and the cost of the labor used in the reclamation operation. The unused pieces or scraps of the socks form a grade of waste selling about 2½ cents a pound.

"It will be found advisable, of course, to keep each kind of goods to itself, for example: (1) plain cotton goods knit of natural color yarns; (2) ingrain goods, knit of colored cotton and rayon yarns; (3) goods knit of yarn containing Japan silk; (4) goods knit of yarn containing Celanese; and (5) goods knit of yarn containing wool. This is advisable so that when it is found desirable to dye the socks, the proper dye formulas can be used.

"The sewing machines used for sewing up the defective socks are adapted to this work, making a soft seam and one that does not pull out easily.

"Where the socks are dyed, they are boarded and mated and boxed. These operations are done in the regular departments for this work, and add a great deal to the cost of the finished stock, which is all right if a sufficiently higher selling price is obtained."

A western mill replies to the inquiry in the following manner: "Here in our mill we have worked on the theory of *prevention* of waste on ribs, rather than re-

claiming waste, but as that is impossible to a certain degree, we have to consider it—although we do run on an average, week in and week out, of about one to 1½ per cent imperfect on the total run of work, with practically no waste on short half hose tops.

"This happy condition requires ceaseless attention to small details such as a constant check up of needles and rigid discarding of doubtful needles, which is done on an average of every four to six weeks with an adequate pay for operators in order to get their full cooperation.

"Now as to the waste itself, we sort it out very carefully as to its condition, so that when we back wind it, it is as nearly perfect as a raveled yarn can be after it has once been knitted. We use the regular No. 50 Universal winder, with 6-inch new taper coning, which makes a very good package, using care to tie small weaver's knots, as we would have quite a few knots in yarn of this nature as a matter of course on account of the short ribs.

"After the yarn is back wound, which is done directly from ribs without any subsequent re-winding, it is sprayed with a fugitive colored tint which identifies it is a back wound yarn, and this serves to prevent the waste sorters from classifying it again as material to be back wound—thereby preventing a second use of the yarn, which it does not pay to bother with.

"This description applies naturally to ribs that are too bad to be mended into firsts—which we are quite often able to do when the defect is nothing more than a drop stitch which can easily be latched up.

"Yarn which has been reclaimed as I have described can be used to almost as good effect as if it were new yarn, according to our experience."

Another well known manufacturer points out that there are a great many practices in use for disposing of half hose waste, ribs, etc., and that nearly every mill has its own solution of the problem, the merits of each being open to discussion. He then tabulates the following possible methods which might be used in various cases:

1. Ravel the tops down and sell the waste as ravelings, instead of rag waste. The price received for ravelings is considerably higher than that of plain waste.

2. Back wind along the lengths, where the value of the reclaimed yarn is sufficient to support the expense of back winding. This of course is used only on tops made from high priced yarn.

3. If menders are sufficiently well trained, the smaller holes in the top can be mended, then used as first-class tops. This of course depends on the skill of the mender and the size of the hole causing the top to be classed as waste.

4. Some tops can be used as wicks over which the silk is run, in order to wet it, on full-fashioned machines.

5. Some mills specialize on using these tops as a basis for stuffing and making into rag dolls.

6. Also colored ones particularly, and occasionally some white ones, are used for making hook rugs and woven rag carpets, by cutting the tops into strips.

7. They can be used as packing for wrapping up delicate machine parts for shipment.

8. Some of them are used for sewing in the back and making athletic underwear. The rib effect has considerable elasticity and thus takes the strain off of the fabric of underwear made from woven material.

"These are just a few of the uses that come to mind, and of course some of them are not practical in the hosiery mill where the waste originates. The waste must be sold in many cases to other manufacturers, but by sorting it and handling it direct, the mill can usually get a considerably better price than by merely selling as waste."

Another man says that, "You can reclaim the ribbed tops by back winding if the hose was ribbed on a single feed ribber. The yarn will run satisfactorily on the ribber again. In the case of a double feed ribber, it does not pay to back wind, for reasons which the knitter will understand—that is, in unraveling one yarn runs into another and a tangle results, and the back winding in this case cannot be done with machinery.

"If the rib top was spoiled by the knitting machine in addition to the back winding, this top can be run on the transfer again by the knitter, which takes a little more time and some system would have to be worked out to allow the knitter a little extra compensation for the spoiled tops she reclaims, or else the temptation is to spoil them so that they cannot be used again. To run the tops on again under this plan, a margin must be left on the rib top when cutting them off from the knitting machine fabric, about as long as the margin left by the ribber from the loose course line to the welt.

"We have found it a very satisfactory plan to sell these ribbed tops to glove factories scattered throughout the South, especially if the tops are of a cotton yarn. These concerns pay a much higher price than can be secured in selling the material as waste.

"As to reclaiming the waste from the knitting machine, not much can be done if the machine is on fancies, and if plain hose are made without double sole, the leg part, as well as the foot, can be back wound, but if the double sole and high spliced ankle are made it is not a paying proposition."

Another man furnished his ideas with reference to half-hose selling retail at 35 and 50 cents. In the case of these goods, he says: "There is no practical way that I know of to reclaim a part of the sock except the top. If the top is made on a single feed ribber, you can back wind it, re-knit it on the ribber, and it will run almost perfectly, or if it is made on a double feed machine, the top can be cut off the sock, leaving about one inch of the leg for a topper's margin, and they can be re-topped and re-knit. Of course tops like these are a little harder to put on, but you can well afford to pay the operator a little extra, or you might let each knitter re-knit his or her own tops which might cause them to be a little more careful about letting yarns run out, etc."

Any further ideas on this subject will be welcomed by the "KNITTING KINKS" department from any readers who wish to discuss it.

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This Plan of Fast Color Identification has already shown over 3500 wholesale, retail and cutter buyers how to find and know fabrics containing Franklin Process Fast-to-Bleaching Colors, the fastest of the fast colors. Over 20 manufacturers now use it.

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Over 20 Manufacturers are now identifying their color values by the Franklin Process Fast Color Label; and through listing in the Directory are introduced to thousands of new buyers.

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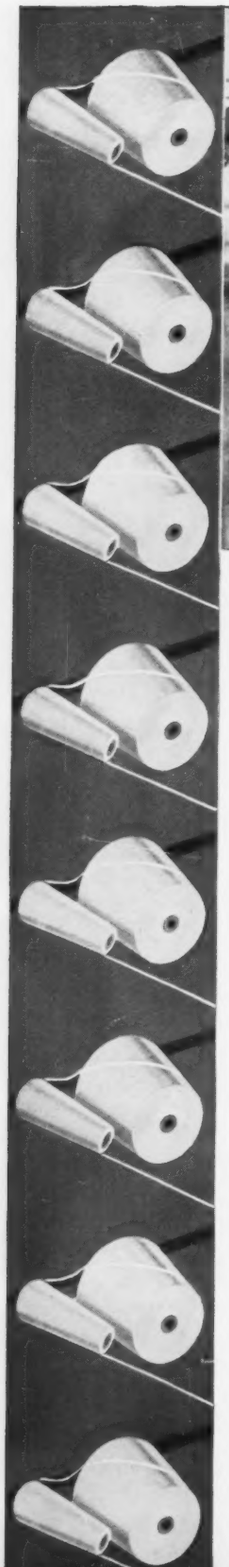

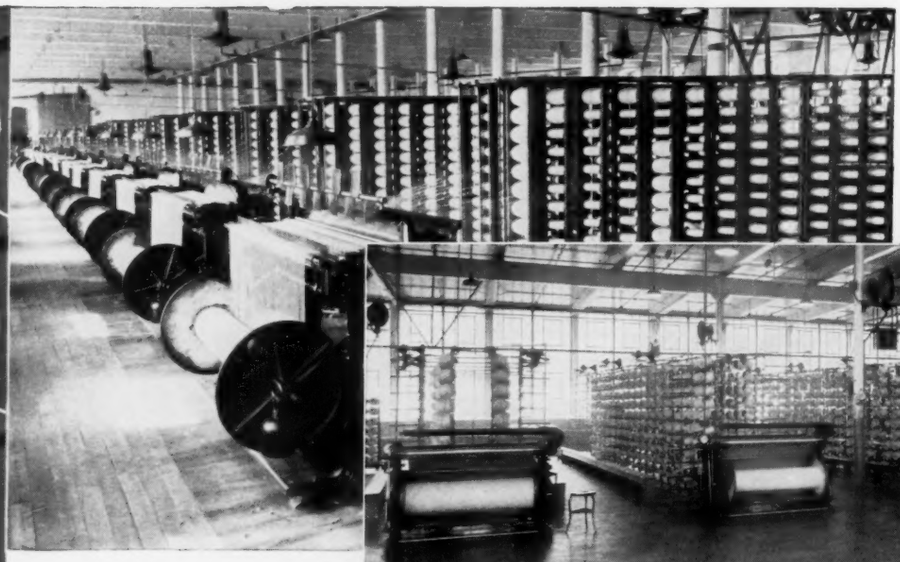

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Among the Knitting Mills

ROBBINS KNITTING MILLS, High Point, N. C., manufacturers of seamless hose for ladies, are building an addition which will double their capacity. They state that they have already purchased 25 new knitting machines.

Belmont Hosiery Co., Belmont, N. C., have built an addition which will enable them to double their production of hosiery, and also provide space for dyeing and finishing department.

O. E. Kearns & Son, High Point, N. C., recently had 50 knitting machines added to their hosiery mill.

Wiscassett Mills Co., Albermarle, N. C., one of the oldest manufacturers of silk hosiery in the South, is completing an addition to its plant in that city to house 60 additional full-fashioned hosiery machines, it was recently announced. The machines are to be installed sometime during the present year, and upon completion of the installation the company will have 141 machines in operation.

Charlotte Knitting Co., Charlotte, N. C., recently installed a number of new full-fashioned machines. The recent installation now gives the company a total of 24 machines.

Elliott Knitting Mills, Hickory, N. C., were sometime ago reported installing H. S. L. full-fashioned hosiery machines.

The Ridgeview Hosiery Mill Co., Newton, N. C., have installed eight full-fashioned machines and enlarged the plant at a cost of $125,000.

McEwen Hosiery Knitting Co., Charlotte, N. C., have been reported to be installing 37 new full-fashioned machines in their new plant at Burlington, N. C. The company already has 13 full-fashioned machines and 200 seamless machines.

The Nebel Knitting Co., Charlotte, N. C., has been reported as planning an addition to their second mill. When complete, the plant will have 60 machines, and will employ 100 additional persons. The new building will cost $75,000 and the machinery $140,000.

Carolina Knitting Mills, Inc., Burlington, N. C., have installed eight 300-needle machines for making ladies seamless hose, novelty hose, French clock mesh hose and novelty-heel hose. They now have 16 machines in operation.

The latter part of January was the time scheduled for the completion of the new $200,000 plant of the Knit Products Co., at Belmont, N. C. This company was organized by A. F. Dichtenmueller and other manufacturers of Charlotte, N. C., to manufacture full-fashioned silk hosiery. Lockwood Greene, Engineers, Inc., are the engineers on the job.

Jacobs & Spivey Hosiery Mill, Bridgeport, Ala., installed 16 new full-fashioned machines during the latter part of last year and placed order for 60 more. The management announced that plans are being made for other expansions.

Everwear Hosiery Co., of Milwaukee, Wis., has leased a building in Chattanooga, Tenn., for a dyeing plant. The plant is to take care of the entire output from the Milwaukee mills. Machinery has already been installed in the plant. It is understood that all mills of the company will eventually be moved to the Chattanooga district from Milwaukee, to augment the present output there.

The $300,000 addition to the full-fashioned plant of Davenport Hosiery Mills, Chattanooga, Tenn., has been announced as near completion, with production scheduled to start about the 1st of February.

It has been announced that operations were to begin in the new plant of the Cadet Knitting Co., at Columbia, Tenn., about the first of the year. There were to be 50 machines and 350 workers at the outset, with an increase in both machines and employees scheduled for a later date.

Lynchburg Hosiery Mills, Lynchburg, Va., have increased their capital stock from $100,000 to $300,000.

It was recently announced by Richmond Hosiery Mills, Rossville, Ga., that work had been started on the new $285,000 addition to the full-fashioned plant, and that upon completion of the addition 30 new 48-gauge machines will be installed. The new structure is to be completed early in the spring.

The Golden Belt Manufacturing Company and the Durham Hosiery Mills, both of Durham N, C., are expected to make rapid strides during the year. It is reported that the Durham Hosiery Mills will install 16 additional full-fashioned machines, bringing the total for this company to 80, while the Golden Belt Mfg. Co. will increase its total to approximately 125 machines.

Real Silk Hosiery Mills, of Indianapolis, recently placed with Smith, Drum & Company, what is believed to be the largest single order for dyeing machinery contracted during the past year. It is stated that increased production schedules at Real Silk Hosiery Mills have necessitated the expansion of their immense dyeing facilities. The machines on this order totaled 15 in number, and have a dyeing capacity of 5,000 dozen stockings daily.

Certified Hosiery, Inc., Allwood, N. J., who installed quite a number of H. S. L. (Theodor Lieberknecht) full-fashioned hosiery machines during the latter part of last year, recently placed another order for a considerable number of machines with Alfred Hofmann, Inc., West New York, N. J.

Debonair Full-Fashioned Hosiery Mills, Chattanooga, Tenn., (successor to Debonair Hosiery Mills) recently completed organization, and announced a capitalization of $150,000. Clyde Wilkins, of Chattanooga, Tenn., is president and G. H. Northcutt, Marietta, Ga., is secretary. It is stated that the mill will be equipped with 42 gauge full-fashioned machines.

The Superior Hosiery Co., Lexington, N. C., will install 50 knitting machines in their plant on West Side Drive, it was recently announced by J. J. Dell, general manager of the company. They manufacture men's dress sox.

Carpenter-Colquitt Mills, Inc., Shelby, N. C., recently organized with R. E. Carpenter as president. They have installed 25 knitting machines for the manufacture of women's hose and half hose.

If the plans that Jos. S. Silversteen has long been working on are perfected, Brevard, N. C., will soon be favored with a very modern hosiery mill, as the plans call for installation of up-to-date machinery for making high grade hosiery for men and women.

The Daintee Manufacturing Co., Johnson City, Tenn., expects to add knitting equipment within a few months. The company at present manufactures rayon underwear, operating cutting, sewing and similar machines.

The Sterling Hosiery Mills, Spindale, N. C., which represents a consolidation of the Forest City Hosiery Mills and the Horn Mill, Spindale, recently moved the Forest City equipment to a plant in Spindale. The mills have a total of 18 full-fashioned machines and will finish at the Spindale plant.

Another Single Unit Full-Fashioned Machine?

A PRACTICAL DEMONSTRATION of a machine which, it is claimed, will knit full fashioned stockings in a single operation, eliminating footers and bar toppers, is to be given in the Gray Line Hosiery Mill at Eddington, near Philadelphia, early in May, according to Wilfrid Gray, who controls patents (pending) for the attachments to standard leggers, the method of their operation and the stockings produced by the machine thus converted.

Mr. Gray on January 1st withdrew from the Largman Gray Co., at Croyden, Pa., 15 miles out from Philadelphia. He states that sample stockings which sustain every claim he makes for his patents have been knitted and submitted to a few persons in the trade, and pronounced practical. The attachments, he states, may be used on any of the standard makes of full-fashioned hosiery machines. He claims that use of the converted machines would effect a saving of 25 per cent in capital investment and 30 per cent in floor space.

Whether the principle of this machine is similar to that of the machine devised by the Oliver Knitting Co., and referred to in January COTTON has not been disclosed, and nothing has been heard officially as to the Oliver invention for several weeks.

The KNIT GOODS MARKETS

SURPLUS silk full-fashioned hosiery was moved to the consuming public during the first part of this year at prices which probably represented the best dollar value handed to women by department stores since the beginning of the recession from peak prices for all time to date. Sales were so heavy just previous to the holidays that it was realized there would be an especially quiet after-period unless something were done to bring shoppers out in force. The backlog for that something was supplied in December last by some scared manufacturers who, accepting a forecast of a dull period of perhaps a few months, at once offered right good stockings at distress prices. Big dealers bought, and although the stores since have been exploiting markdowns, it transpires that the markdowns really were made by mills, and stores managed to take down about the regular margin of profit.

One leading Philadelphia store had special sales of enormous quantities of silk full-fashioned from a manufacturer selling a nationally-advertised brand to retailers direct. They were represented as having "very slight irregularities" and were priced $1.10, which was 55 cents under the regular price for perfects. The stockings were of silk from toe to top, and at $1.10 were gladly taken in preference to either firsts of dollar stockings or perhaps better goods priced $1.25 and there about. The point is, brand sold "irregulars" faster than the dollar price moved perfects.

The mill in question, idle for several weeks for the holiday period, was reported having quite an accumulation, and it is believed in the trade that most of the "irregulars" were really first quality goods sold as imperfects rather than make a lower price for a sale. Standard make of another direct-to-retailer mill was sacrificed in the same store. Sales of this character were run by John Wanamaker and Strawbridge & Clothier in Philadelphia and may be regarded as typical of what department stores elsewhere were doing with underpriced hosiery while relieving a congested market.

Whether the spring movement of silk hosiery will serve to halt the downward course of prices is a question with some leading manufacturers. The answer may depend largely on the effect of recent heavy retail sales after an active holiday trade and the extent to which women may have taken advantage of extraordinarily low prices for stocking up their wardrobes. Offerings of innovations might have a very great bearing on the problem which manufacturers admit confronts them.

Two of the very large northern mlils have stated in reply to a direct question that they have no intention to lower their prices, spring rates having been named a few months ago. No reductions are contemplated, it is stated by these mill heads, but one added, "we shall go along with the market. If small mills reduce and we feel they are getting any of our trade by reason of their reductions, we certainly will meet their cuts and maybe go them one better."

It is pointed out that mills in the class of the Berkshire Knitting Mills in Reading and the Apex Hosiery Co., in Philadelphia, are reported having blanket orders which will absorb their entire production for the next three months, and that unless this shall be found to be an exaggeration, it should be the policy of small concerns to go after the business that the others can not take. The principal in one of the larger full-fashioned organizations said in a discussion of the subject that if he were rid of the mill with several thousand dozen pairs a day he would operate a small plant and keep on the trail of the large ones.

Labor-owned mills having anywhere from ten to twenty machines are said by some of the oldtime manufacturers to be in an especially strong position for annoying large units, that is, provided they are content with a wage as the return from the enterprise, and it usually is their prices that designing buyers quote when trying to play the game of one mill against another.

Price is the problem which manufacturers have got to solve to avert the confusion during the ordinarily busy spring period that was sidetracked by a narrow margin in the midst of the holiday shopping season. As is pointed out by a mill chief who is interesting himself seriously in tryng to hold the market steady:

It is a simple matter to reduce prices 50 cents a dozen but a hard one to advance them only 25 cents.

A 50-cent reduction does not reach the consumer, being absorbed in the wholesaling and retailing.

A 25-cent reduction, in the present market, would wipe out all of the profit accruing to some manufacturers and mark the beginning of their end as hosiery producers.

With mass production, some mills could undersell the small one that initiates price competition, and would still have a margin of profit.

Crowding an Over-Supplied Market with an Increased Potential Production

WHILE it probably is true that, but for happenings in the stock market last year which put the damper on numbers of businesses there would now be no disturbing accumulation of hosiery stocks, some factors are stressing the fact that sharp curtailment of production, the deepest in a decade, failed to steady the markets and avert an annoying price situation. In Philadelphia alone, around 30 full-fashioned mills were idle for periods of from a week to four weeks and all reduced the work time, most of them dispensing with night shifts. It appeared that there was more idle machinery, relatively, in mills selling to the retail trade and maintaining the higher prices; that the deeper cuts in prices of manufacturers selling to jobbers were in hosiery of finer than 42-gauge, and that offerings of firsts at distress prices made it some-

what difficult to dispose of seconds except at very great sacrifice. Three-thread 48-gauge stockings were peddled from store to store at $9 a dozen, in one instance, and the only defect was in unevenness of silk, resulting in rings. There are trustworthy reports of 45-gauge with picot top changing hands at $11 and 42-gauge silk to top selling for $8. Unless accurate description accompany reports of prices quoted, the quotations are meaningless, and often the descriptions are not an index of value, for many buyers are prone to overlook the omission of a few needles or dropping a dozen or more courses. Safe comparisons become increasingly difficult as price competition runs keener.

Mills which have been able to maintain standards while going perhaps half way in meeting revised prices are as a class comfortably situated as to orders. For example, a manufacturer in a small town suburban to Philadelphia for some time has been supplying seven-thread silk hose to a store classed as one of the exclusive specialty shops for women, which sells the line for a dollar a pair and reports it giving satisfaction. Other mills have gone after this store's business in dollar hosiery and failed to get it. As the manufacturer in this case recently became financially interested in another mill, it is assumed he is operating at no loss.

When it comes to selling price hosiery with a minimum of annoyance from returns by consumers, sheer service weights are regarded by some buyers as the more desirable. At a dollar a pair they may show a narrower margin per unit than chiffons, but the loss from rejects and defects which develop after the stockings reach the shopper's home is so much less that there is a larger net profit for the store.

The D. S. & W. mill in Reading, which was organized less than three years ago, has specialized in seven-thread silk with so much success that the company but a few weeks ago completed a five-story addition, in which it will place more machinery. "Last year we could not make all of the hosiery we sold," it was stated. There are 64 machines in this plant, which this year is to be enlarged, and all are of 42-gauge. It is intended to install a set or two of 45-gauge in a few months. Most of the 42-gauge mills in Reading knitting seven-thread silk have been well supplied with business during the last few weeks of production adjustment.

Two mills in Philadelphia, both of which remained active while some more pretentious concerns were idle last month, have for some time been knitting seven-thread silk of 45-gauge machines—not because the trade is calling for that gauge, but for the reason a seven-thread stocking is wanted and the mills have had no 42-gauge machines available for taking care of rush orders. One of the mills sells to department stores and chain store organizations. A manufacturer in Reading has a like outlet for 11-thread silk of 39-gauge and is producing 4,000 dozens a month, comparing with 1,000 dozens a few months ago. It is understood the retail price of this 11-thread line is $1.65 a pair.

The Berkshire Knitting Mills, having well sustained demand for its Bemberg number, is understood to have diverted all of its 39-gauge equipment to the

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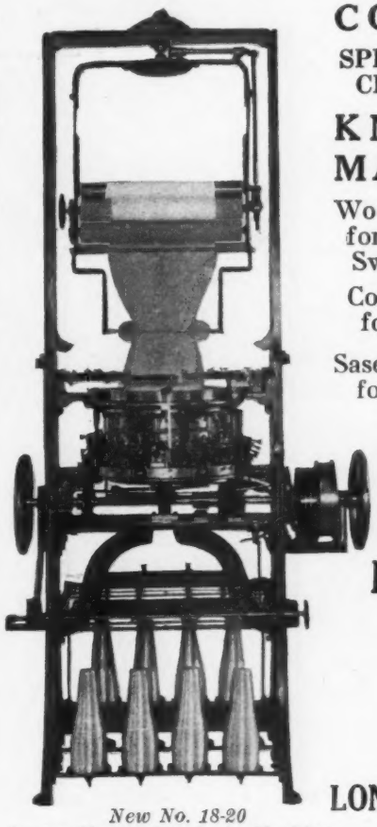

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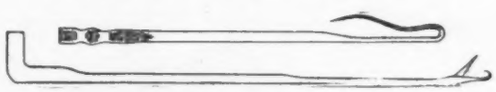

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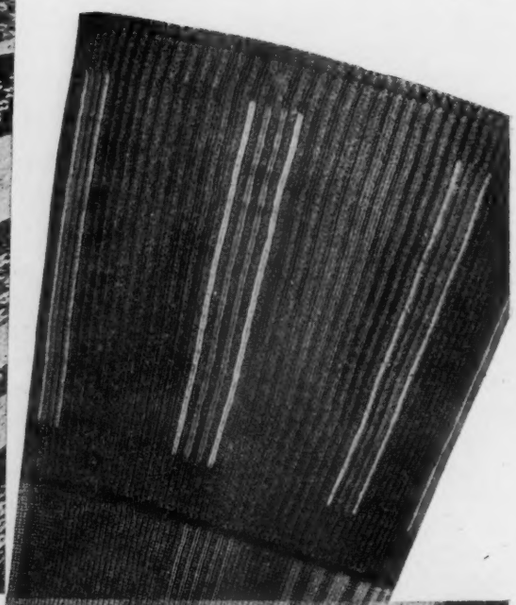

More than ever, there is need for attracting the counter buyer in his purchases of Half Hose. An attractive pair of garters appeals and is purchased. For the same reason, FANCY TOPS result in added sales.

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THE FIDELITY UNIVERSAL RIBBER

Bemberg division. Demand is reported calling for about all the company can produce. The Bemberg line goes to jobbers at $7.75 a dozen and retailers sell it for a dollar a pair. Some jobbers say they sell more full-fashioned Bemberg than of full-fashioned silk.

42-Gauge Machines Considered Better Adapted to Changing Style Conditions

WHILE there have been no disclosures of a definite nature as to what type of machines will lead in the 1930 installations, it appears from the comment of manufacturers that a large per cent of the new equipment will be of 42-gauge, which is said to afford more opportunity for return on the investment than machines of finer gauge. It is estimated by a person close officially to machine builders that there will be a practically even division of 45- and 42-gauge in this year's new installation. One company, which contemplated using 45-gauge amended its order to read "42-gauge," and it is understood there has been quite a little substitution of this kind. A mill to which 51-gauge machines were shipped may not uncrate them until there is less doubt as to the popular gauge, it is stated. A Philadelphia manufacturer of 45-gauge, four-thread silk, with picot, is the active spirit in a new organization which shortly will commence production.

The new mill is equipped with 45s. The management, having a profitable, steady business through a mill which it has been operating for three years, states there is increasing demand for 45-gauge knitted full width and length and not skimped in any particular. Much of the so-called distress 45-gauge is said to be knitted on 42s. In a mill in which both are in service and which is credited with producing honest stockings there is to be installed shortly more of 42s. It was noted that R. H. Macy & Co. when listing requirements late last month and asking mills for samples, detailed 184,000 dozens of 42-gauge out of an aggregate of 311,000 dozens. The remainder, with the exception of 53,000 dozens of 48-gauge, were to be of 45-gauge.

Spring Shipment Inquiries Received On Women's Seamless Silk Hosiery

MANUFACTURERS of circular knit fine gauge silk hosiery are in receipt of many inquiries concerning the outlook for business in the plain back very gauzy stocking which last summer enjoyed some measure of notoriety by reason of its use for simulating bare legs. Retailers are trying to sound manufacturer sentiment before hearing from the consumer. Several manufacturers who were kept sold up of their production for three months in 1929 and who recently have had a dry session, express themselves hopeful of a revival of the near fad, but none is enthusiastic over prospects of having another such season with the circular knit until after the Hosiery Guild, Inc., has commenced to function. Then will circular knit undergo a decisive test and 340-needle machines be given a tryout. A number of mills will install one machine each of this recent new Model K of Scott & Williams. Some say they doubt the expediency of undertaking to

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knit finer than 300-needle hose. Skeptics seem to feel that with the influence which the Hosiery Guild may exert in improving and maintaining standards for circular knit hosiery late models of 300-needle machines should meet every requirement.

There is manifest in seamless circles some elation over the introduction of a full-fashioned hose innovation in which the fashion dots flanking the seam above the ankle are eliminated. This, say seamless enthusiasts, represents the first step in the direction of undertaking to produce as nearly as possible a plain back full-fashioned hose. Patents for such a stocking and the method by which it is produced are said to be controlled by the Society Maid Hosiery Mills, Inc. It is preparing to market the patented number, which is to come out in three-thread silk 48-gauge construction and, presumably, pass over the counter for $1.50. Just what advantage is claimed for the elimination of the fashion darts has not been made plain, except that, it is said, the changed process of knitting the leg reduces the danger from runners.

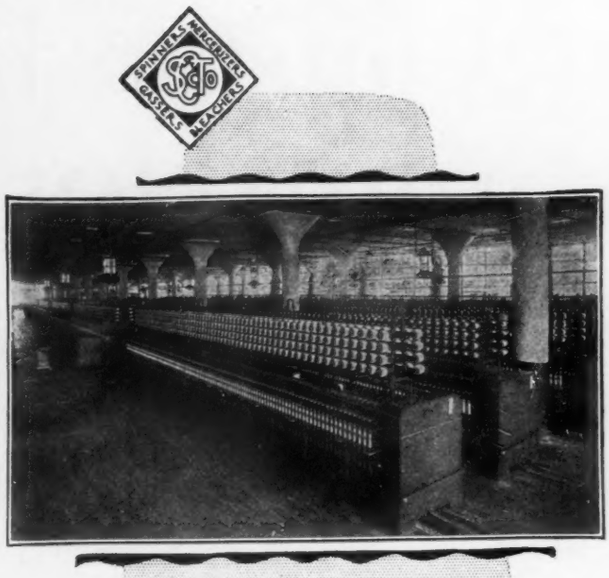
While the Society Maid organization still was preparing for the introduction of the patented stocking a similar number was put on sale by Saks & Co. in New York, and this brought from Society Maid threats of a suit, on the ground that Saks announced the innovation was inaugurated by the Saks company.

Silk hosiery is thought to have enjoyed larger sales this winter from the fact there were heavy declines in sales of women's silk-wool, due to protracted periods of excessive temperature. Some of the very large retail stores carried practically none in stock other than an assortment of sizes in a narrow range of colors and mixtures, all of which was in cartons at the counters, according to mill representatives. Few retailers or jobbers, it is stated, have more than a few cases, from which it appears the mills, with ready-to-ship goods, were about the only ones to suffer from the disjointed season.

Trading in sports hose and men's and boys' golf hose tapered off quite materially since fall, and as further contracting for spring appears to have been called off, some few mills specializing in these lines have been operating on part time schedules, which was true also of some mills making infants' socks and misses' sports length hose.

The situation in relation to misses' appears somewhat clouded by speculation as to whether anklets will come to the front with springtime and again have an adverse effect on regular standards of plain and sports hose. As the matter of girls wearing anklets is in the balance, these substitutes for stockings have been moving out in a much restricted volume, and recently some leading manufacturers cut down on their production, There are some leftovers from 1929, and these are a factor in the existing uncertainty.

While some interests say anklets will be fully as popular as last season, it is pointed out by those holding a contrary view that comparatively few have been worn since the beginning of fall; that even rough weather caused no appreciable demand for them. Thus, the pull-overs continue a doubtful trading proposition, a reflex of which is seen in the conservatism with which distributors have been taking children's hose.



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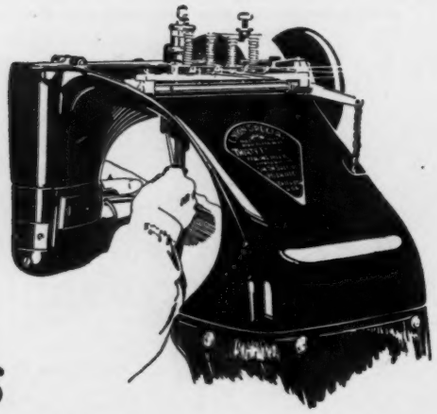


This

Union Special felling machine embodying the perfected "feed-off-the-arm" principle is distinctly in advance of any previous equipment. The construction of the machine is such as to permit a comfortable operating position with generous room for the operator's arm and full vision of the work. It is constantly setting new records in production, even inexperienced operators soon surpass expert operators working on other types of machines.

It produces the famous Union Special double locked stitch forming a beautiful flat, unpuckered seam. Very fine thread can be used as desired — the stitch is perfect with any thread. The transmission of power is direct to the needles, feed dog and loopers by the simplest and most efficient mechanism possible. The moving parts are covered, yet all are easily accessible. All vital bearings are equipped with an automatic lubricating system insuring long life and trouble-free operation.

Union Special Style 35800 is a sister machine for felling operations on heavy, bulky fabrics. It combines the advantages of the "feed-off-the-arm" principle with ample power to sew through the thickest bunches where seams cross, producing a smooth, even seam with tight, uniform stitching.

Union Special Machine Co.

400 North Franklin Street
Chicago, Illinois

Engineering surveys show increases in production ranging from 13 to 41%. In each instance operators' earnings were higher despite reductions in piece rates. Send for copies of these surveys and samples of the work produced by Union Special Machines.

C2-Gray

A leading eastern Pennsylvania manufacturer of children's better grade, misses' and a general line of juvenile hose, soon after the beginning of the year moved what seemed like large quantities to the Woolworth company, some of whose stores made lavish displays of numbers of attractive patterns all priced 20 cents a pair, which was below the regular retail price by from five to 15 cents. The mill appears to have been carrying a slow-moving stock.

Almost simultaneously with this transaction, the Raines Hosiery Co., a Philadelphia jobbing house handling children's hose exclusively and carrying stocks for department stores and small shops, was liquidating the business. One explanation was the alleged failure of manufacturers to give the jobber protection, in that some mills sold to retailers at the same prices the Raines Co. was paying. Furthermore, it was contended, mills dumping stocks through five-and-ten stores were a contributing factor in the decadence of the jobber of children's hose.

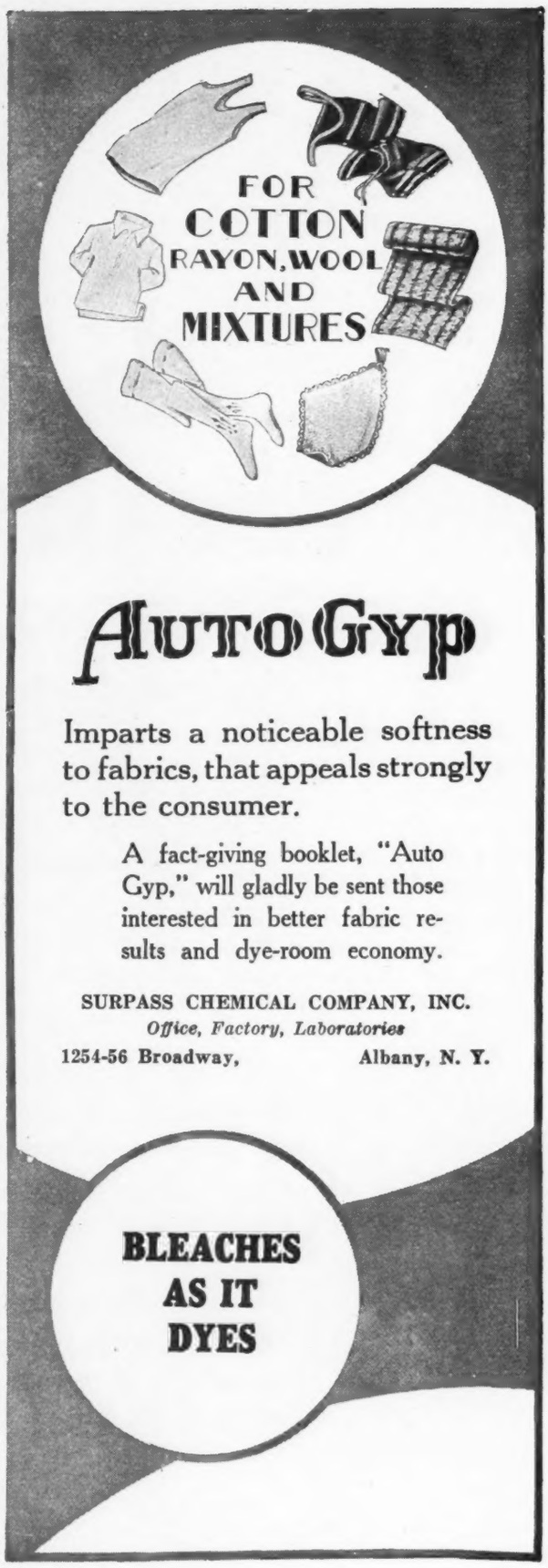
Notwithstanding the stories of gloom coming from some quarters in the juvenile hosiery trade, certain of the manufacturers of preferred goods report having fair commitments for spring and additional business being placed, but buyers being careful to not load their houses with goods the ultimate disposition of which may depend upon some fashion whim.

Orders for Half-Hose Coming Through, but are Harder to Pin Down, Say Mills

OLD-TIME PRODUCERS of men's fancy half-hose, even those with a well established trade, are not well satisfied with the manner of most jobbers in relation to spring business. There is demand for the better grades in semi-refined patterns, to sell for 35 cents and 50 cents respectively, and business probably would proceed on a fairly steady basis but for the multiplicity of color combinations and the frequency with which innovations come on the market. This condition necessarily causes dealers to order cautiously and accounts for the shifting of orders from one mill to another.

Commenting on the perplexing situation, a manufacturer in the Schuylkill Valley selling direct to jobbers says mills are not safe in manufacturing for stock, and that it is unusually costly "to restrict production to orders. "They come in flocks," he went on, "and it seems cancellations come in the same manner. We are operating the plant as usual, however," the manufacturer continued, "for we know there are more men this year to wear socks than a year or two ago and just as many, if not more, socks will be sold. It is our plan to carry stocks a reasonable time, and then, if jobbers leave us with the goods we shall find some other way to get them into the hands of concerns that will reach the consumer."

A manufacturer of 50-cent and dollar half-hose sold direct to retailers expressing much disappointment with the tardiness of dealers to detail their spring orders, said: "We've had a poor season for wool-mix half-hose, and unless the remaining weeks of winter bring about a demand we will be left with stocks which really were tied up in retailers' orders, but cancelled. This makes us more doubtful of the expedi-


FOR
COTTON
RAYON, WOOL
AND
MIXTURES
AUTO GYP
Imparts a noticeable softness to fabrics, that appeals strongly to the consumer.
A fact-giving booklet, "Auto Gyp," will gladly be sent those interested in better fabric results and dye-room economy.
SURPASS CHEMICAL COMPANY, INC.
Office, Factory, Laboratories
1254-56 Broadway, Albany, N. Y.
BLEACHES AS IT DYES

King Cotton decree the return to

. . . . . and Kaumagraph is helping to insure the demand for trademarked, identified cotton goods

IT started early in 1928—this return to favor of styled cottons. Department store advertisements favored the fashion of cotton. Editorials praised cotton. Textile mills, government agencies, home economics organizations, all have lent their support.

1929 has seen even greater interest in cotton than the year before. New uses have been developed, with the Cotton-Textile Institute of New York leading the movement. Hotels selected cotton for sheets and bedspreads, shower curtains and drapery fabrics. The Army started experiments with a new cotton uniform cloth. For industrial purposes cotton yardage has shown tremendous gains.

Then from Paris came the sweep of new fashions for women. Longer skirts . . . which meant more yards of material. Flounces and trains, panels and draped dresses . . . which meant more yards of material.

Cotton for the New Fashions

And so the demand for *styled* cotton goods for evening, afternoon and sports wear has gone on and up. Cottons that are authentic. Cottons that are branded with the name of the manufacturer. Women are insisting on branded fabrics because they want that assurance of quality and style which goes with any trademarked product. They want to avoid inferior substitutions. They want to be sure of what they buy.

Manufacturers have been quick to learn the advantages of trademarking. They value the steady demand that is assured . . . the ready recognition that

and Dame Fashion favor *of* styled cottons

is given their fabrics... the woman-to-woman advertising which their *identified* materials make possible.

Kaumagraph's Part in Cotton Prosperity

Since long before this new period of prosperity, Kaumagraph has been identification headquarters for the textile industry. And since the cotton boom, many an executive has come to Kaumagraph with his trademarking and identification problems.

Kaumagraph Dry Transfers have been the standard method of applying trademarks since 1903. They are now available in both one and two colors. Other Kaumagraph services include an Art Department for the design of trademarks, a department that specializes in trademarking machinery, a laboratory devoted solely to research in special trademarking problems and a department experienced in registering trademarks.

We would welcome the opportunity of working with *you* on your trademarking and identification requirements. A letter, wire or phone call will bring additional information or a representative.

* * *

KAUMAGRAPH COMPANY
200 Varick Street, New York City

Boston . . Chicago . . Philadelphia . . Los Angeles
Charlotte, N. C. . . . Chattanooga, Tenn.
Paris, Ont. . . . Paris, France . . . Manchester, Eng.

A few of the country's foremost stores that have featured cottons in their advertising:

BOSTON
R. H. White Co.
Jordan Marsh
E. T. Slattery
Filene

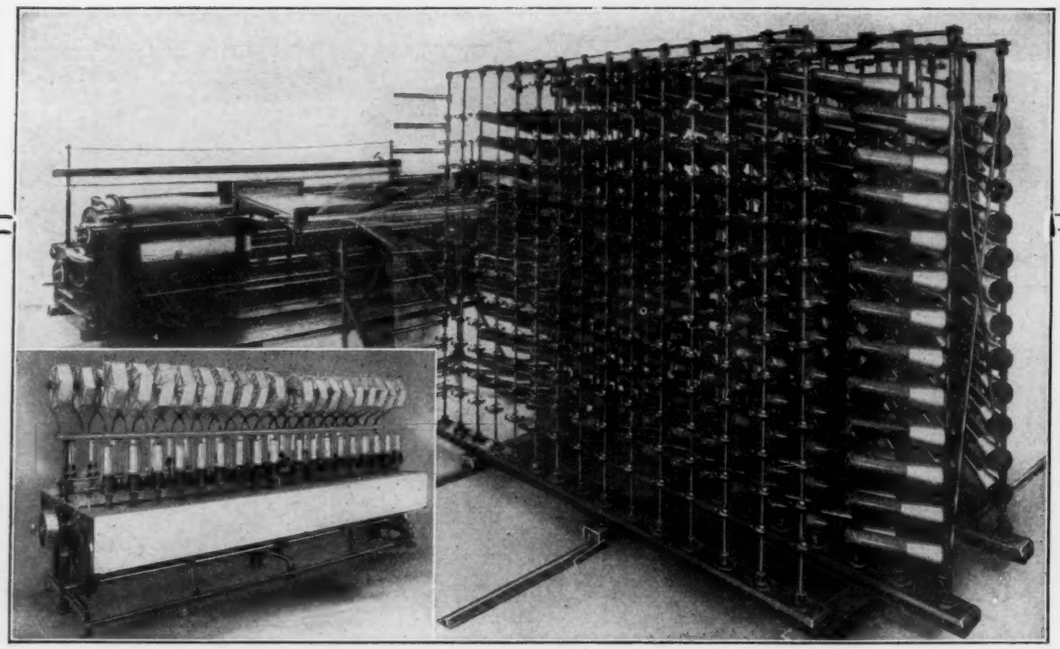
BROOKLYN
Martin's

NEWARK
L. Bamberger & Co.

NEW YORK
Best & Company
Lord & Taylor's
McCutcheon's
Bloomingdale's

NEW YORK (Cont'd)
Gimbel Bros.
R. H. Macy & Co.
Stern Bros.

WASHINGTON
Kann's
Woodward & Lothrop



Lever Method

Of Warping from Bottle Bobbins—Overend

THE LEVER Overend method of high speed warping from Bottle Bobbins is highly profitable—because of its practical and simplified operation in mills handling fine count yarns, especially **PURE SILK** and **RAYON.** The increase in production and quality of work by the Lever method in warping, show that mills can be operated to a greater degree of efficiency than they are under present day methods—by reason of the fact that each strand of yarn is evenly tensioned by the Lever Patented Creel tension. Mill owners have profited by this most efficient method of high speed warping and you can do the same.

OSWALD
LEVER
CO., INC.
PHILADELPHIA

11th and Cambria Sts. Near N. Philadelphia Station

ency of making up spring and summer numbers, except to fill orders in hand, and we have about decided to make up nothing for stock."

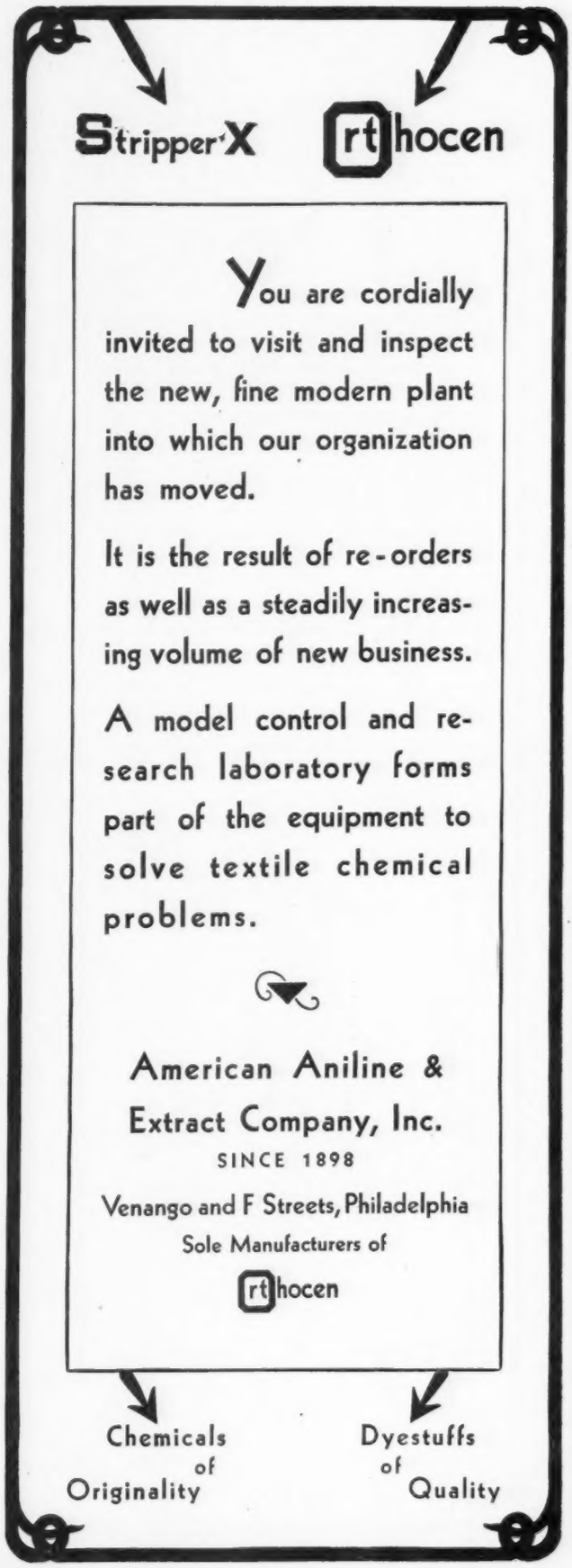
Reports from identical manufacturers indicate an almost negligible production of silk-wool half-hose in last November, indicating a scarcity of repeat orders. The figures given as to output were 1,376 dozens, which was less than one-twelfth the production in November, 1928. On the other hand production of wool-rayon socks in last November, amounting to 13,137 dozens, was almost twice as great as that for the corresponding month of the previous year. The significant gains in November, 1929, over 1928 were in rayon and cotton, from 306,141 dozens to 367,566 dozens, and triple mixture, which advanced from 106,983 dozens in November, 1928, to 150,155 last year. There was a notable falling off in output of silk, both seamless and full-fashioned.

Although half-hose, all classes, fell off in indicated production last November by approximately seven per cent from the corresponding month of the previous year, stocks in mills at the end of the month were larger, according to manufacturers' reports to the Department of Commerce, who reported also a drop in new orders taken during the month and in unfilled orders at the end of the month. All of which doubtless accounts in large measure for the difficulty of getting firm orders, as complained of by mill men.

Price Steadiness in Men's Underwear Brings Jobbers to Market in Buying Mood

FIRMNESS of the cotton underwear markets was indicated in the fact that a month after manufacturers had named prices for heavy weights there were no reports of recessions by any of the mills whose quotations had gone out, and that as additional producers came on the market the prices of the first to show samples were adopted. Where there were variations it was conceded they were accounted for in differences in construction. The indicated firmness was regarded by mill men as the more significant from the fact jobbers were making no move in the matter of indicating their wants. Ordinarily, if buying lags a few weeks after an opening, someone usually commits the blunder of cutting prices, as if competitors would not meet the revisions. Thus far this year, with the P. H. Hanes Knitting Co. again the first to establish prices, there has been no attempt to put buyers in a hurry by trying to horn in with a shading from the lists.

Reductions from a year ago by 12½ to 25 cents a dozen are what leading manufacturers expected. It appears from the comment of some of the larger jobbing houses that buyers had looked for a somewhat deeper cut. Not many of the buyers were reported in the New York primary markets during January, apparently not disposed to help mills maintain values. But, even though absent in person, their presence was felt in a moderate way following the middle of the month, when it began to look as if some contracting was contemplated, more especially by concerns having a substantial following in the South and the Northwest, two sections where heavy weights sell earlier and in larger quantity, relatively, than in the metro-


Stripper X
rthocen
You are cordially invited to visit and inspect the new, fine modern plant into which our organization has moved.
It is the result of re-orders as well as a steadily increasing volume of new business.
A model control and research laboratory forms part of the equipment to solve textile chemical problems.
American Aniline & Extract Company, Inc.
SINCE 1898
Venango and F Streets, Philadelphia
Sole Manufacturers of
rthocen
Chemicals of Originality
Dyestuffs of Quality

NEUTRASOL PRODUCTS CORPORATION

41 PARK ROW NEW YORK

Proprietors of

FARBESOL

For producing the softest finish known on any type of textile fabric.

SERAYON

For producing the most perfect Rayon Crepe.

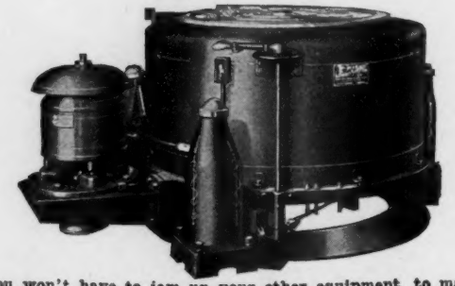
NEUTRASOL V-75

For soaking natural silk for hosiery.

NEUTRASOL S

For soaking natural silk for general throwing.

You've *plenty* of room for it!



You won't have to jam up your other equipment, to make room for the husky O-T. It extracts a mighty lot of work in mighty little space. You won't have to fix up a special foundation, either.

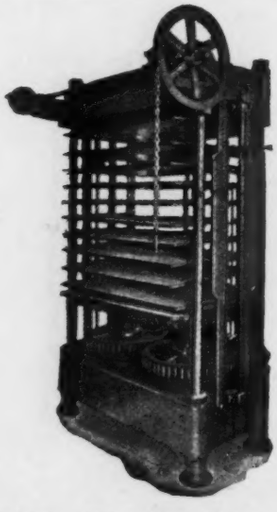
Mechanically simple, amazingly compact, tireless—the O-T will soon show you some new extracting profits. Find out about the silk-finish basket, with its side sheets of monel metal—Get *all* the facts on the profit-making O-T.

THE AMERICAN LAUNDRY MACHINERY CO.

Specialty Dept. C

Norwood Station, Cincinnati, Ohio

The Canadian Laundry Machinery Co., Ltd. 47-93 Sterling Road, Toronto 3, Ontario, Can.



RELIANCE

Hot Plate Screw Press

FOR

Hosiery and Underwear

Write for Catalog and Prices

Reliance Machine Works

FRANKFORD, PHILA.

FELT

For all Mechanical Purposes

Slashers and Roller Cloth for Cotton Mills.
Felt wicks and washers for
FULL FASHION HOSIERY MILLS
Felt Sets for TEMCO Electric Heaters
Complete stock for immediate delivery.

Samples and Prices Upon Request

FIDELITY FELT COMPANY

Pike St. & Rising Sun Ave., Phila., Pa.

Angle Steel Equipment

for Factory, Shop and Office

Ask for Catalog "O-O"

Knitters' Benches, Tables, Boxes, etc.—Angle and Sheet Steel Stools—Chairs—Desks—Bench Legs —Cabinets—Trucks.

Agents and Dealers in all Principal Cities

ANGLE STEEL STOOL CO.

Plainwell, Mich.

Send for Catalog

Hosiery Guild Adopts "Guildmode."

THE name "GUILDMODE" has been approved as the hallmark of the Hosiery Guild, Inc., and specifications have been officially adopted to govern the production of four numbers of women's fine gauge silk hosiery without seams, to be made by members and to carry the identifying name. Likewise, the transfer to be used in conjunction with this name has been formally decided upon. This will be in two colors, carrying the name "Guildmode," supplemented by the words "Certified by Hosiery Guild, Inc." The license numbers of the various members are to be used in conjunction with the transfer on their hosiery for identification purposes.

The numbers selected by the specifications committee are in the 300, 320, and 340-needle range, namely, a four-thread and a seven-thread of 300 needles, a four-thread 320-needle and a four-thread 340-needle stocking.

Among those present at the recent meetings of the Guild were: D. L. Galbraith, of American Textiles, Inc., Guild president; Harry Katzenmoyer, Fisher Hosiery Mills; F. Y. Kitzmiller, F. Y. Kitzmiller Hosiery Mills; Holland Shoaf, Shoaf-Sink Hosiery Mills; Jos. S. Lerch, Weinerth Knitting & Machine Co.; Fred Westcott, Westcott Hosiery Mills; J. Harvey Wilson, Richmond Hosiery Mills, and Harry Kinne, managing director.

politan sections of the East and Middle Atlantic area.

Among the buyers encountered in New York a few weeks ago, after it appeared prices were satisfactory, was one ranking as representative of the larger distributors, who, when asked for his opinion of prices, said: "Prices do seem low, and probably are fair, comparing with last year, but I have no idea of operating just now, except in a very small way for that part of our trade that supplies consumers who put on heavy weights early and wear them until late."

Men's light weight underwear had a lift in sales in recent weeks, when they still were adapted to winter wear, and mild weather of course had something to do with the apathy of jobbers toward heavies. Athletic knitted shirts have had a larger sale this winter than a year ago, according to trustworthy report from scattered distributors, and this tallies with the better conditions existing among mills, some few of which have nothing for immediate delivery. Men's knitted union suits are moving in perhaps lighter volume, attributable to the increasing favor in which short drawers and knitted athletic shirts are held, and moving further and further into the all-year-around class. According to some important distributors, nainsook athletic suits are bearing the brunt of the changing vogue.

One manufacturer of rayon underwear states he will discontinue production so soon as he pieces out his remaining stock for making it more readily marketable without sacrificing. His reason, he states, is that there are too many "loft" manufacturers who buy cheap rayon cloth and shape it into skimped lingerie and underwear. "We find," he said, "we cannot compete with this class of so-called manufacturers, for so many buyers prefer the cheaper, at prices we would not care to meet at the expense of robbing the garments, lest our other lines fall into disrepute. So we are giving up rayon underwear for protecting another line, and will be out of the game so soon as we can get rid of our stock.

KARL LIEBERKNECHT
Full Fashioned
HOSIERY MACHINES
Are Known for
Speed When Needed—
Quality Production Always
(*The Machines Confirm It*)
Manufactured by
KARL LIEBERKNECHT, Oberlungwitz, Saxony
(In Any Desirable Gauge and
Number of Sections)
Imported and sold exclusively by
LOUIS HIRSCH TEXTILE MACHINES, Inc.
47 W. 34th St., New York, N. Y.
Lieberknecht Hosiery Machines have been made by KARL LIEBERKNECHT, Oberlungwitz, Saxony, continuously since 1873

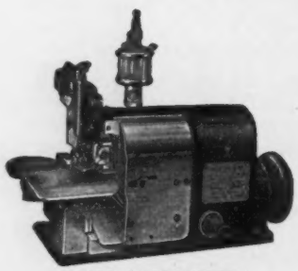
DO YOUR Paper Boxes
Bespeak of Quality?
The attractiveness of the box in which your product is packed oftentime influences a sale.
The very appearance of Old Dominion boxes bespeaks of quality, for these are "individualized" boxes, made especially for your requirements, and with your own design on them you have a quality box that commands and gets attention. Our five centrally located plants can give you prompt service on your box requirements—any type or size. Samples and quotations given without obligation.
OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C. Charlotte, N. C.
quality OLD DOMINION Paper Boxes

MERROW

REG. U. S. PAT. OFF.

HIGH SPEED TRIMMING AND OVERSEAMING, OVEREDGING AND SHELL STITCH MACHINES FOR USE ON KNITTED AND WOVEN FABRICS OF ALL KINDS

——200 VARIETIES FOR 200 PURPOSES——



CLASS 60 MACHINE

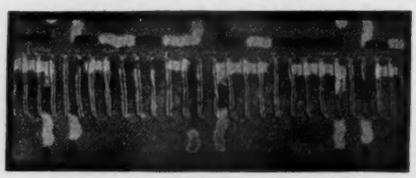
INQUIRE ABOUT NEW MERROW MACHINES

STYLES 60-ABB and 60-D3B

For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.



Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC —For two-thread FLAT SEAMING on Rayon Underwear.

Let Us Demonstrate the Work of These and Other Machines on Your Own Fabric.

THE MERROW MACHINE COMPANY

16 LAUREL STREET, HARTFORD, CONN.

ACME SALES CO.

S. L. DIGGLE
Manager

906 Johnston Bldg.
CHARLOTTE
No. Carolina

Durene
REG. U. S. PAT. OFF.
by Dixie

DIXIE MERCERIZING CO. LUSTRE CHATTANOOGA, TENN.

A thorough knowledge of knitters' and weavers' requirements enables us to give you valuable service in the selection of yarns that will afford best production results. Let us serve you on your next order.

Automatic-Adjustable STEEL STOOLS

Equip your offices, mills, factories and drafting rooms with these up-to-date stools and seating equipment. May be adjusted to any height in one second! Simply lift up on the seat and it locks in place!

New Catalog on Request.

Comfortable back rest and adjustable foot rest optional. 3 and 4 legged models. 20 styles to choose from. Swivel attachment at small extra cost.

VITEK MANUFACTURING CO.
Dept. 302 Omaha, Neb.

Eliminate Dyed Mender Throw Outs

with our

EXPANDING INSPECTING MACHINES

Learn To Hate Dyed Menders

FOR HOSIERY

Edward R. Ammon, Reading, Pa.

Weimar Bros.

Phone Connections
Works: 2046-48 Amber Street
PHILADELPHIA, PA.

MANUFACTURERS OF

Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

Spotty Situation in Sweaters and Bathing Suits.

Bathing suit manufacturers are fairly well advanced in their production campaign, and for some interests the season looms strong. Mills showing the more attractive models report sold up to around May, and several are known to have declined recent early delivery orders for novelty suits. While there is a generally broad demand for fancy combinations, solid bright colors are popular among buyers for some of the more discriminating jobbers, blue and vivid red being picked again for volume sales. Prices are lower than a year ago, the explanation for which is the decline in prices for worsted yarns and the fact singles are being substituted in increasing extent for ply.

It apepars cheap sweaters are being further cheapened by the use of less worsted. One mill is using dyed yarns containing 95 per cent cotton and five per cent wool, for meeting the prices of a competitor, who, he alleges, uses even less wool. There is indicated apparently normal buying of women's light weight pure worsted sweaters for nearby delivery. In the range of sweaters there is a preponderance of plain colors and heather, the reverse of the style trend in bathing suits. Some few mills making both sweaters and bathing suits are operating plants on overtime schedules. A majority of the knitted outerwear mills all through January could have accommodated more merchants desiring nearby delivery, without taxing their facilities.

Charles Cooper Company Incorporate.

The Charles Cooper Company, Bennington, Vermont, manufacturers of knitting machinery, spring and latch needles, etc., have become incorporated and will be known as Charles Cooper Company, Incorporated. This change was made in accordance with the plans of the late general manager, Charles B. Kelly.

The Cooper business was founded by Charles Cooper in 1859 and was continued by him during his life time. After Mr. Cooper's death, the business was continued by the executors of his estate until 1927 when it was taken over by his daughter, Mrs. Charles C. Kelly and Mr. Kelly. The new company, organized under the laws of the state of Vermont, has a capital stock of $300,000. Mrs. Elizabeth Cooper Kelly is president, and William T. Barrat, who has been for 40 years associated with the business in charge of manufacturing, is first vice-president. John J. Hayes, who has been associated with the company for 35 years as superintendent in charge of manufacture of needles, is second vice-president. Gordon E. Scott, of Albany, N. Y., who has been engaged for many years in the machinery business, has now become identified with the company as secretary and treasurer. George H. Rogers, who has been in charge of sales of the Cooper Company for 30 years, is general sales manager. The company is widely known for its spring needle knitting machines, and has carried on a large export business. The company will maintain its present factory facilities at Bennington, Vermont, manufacturing machines and needles, and it is understood that there will probably be an increase of facilities in the near future.

Tubize Made Selling Agent for Chatillon.

The Tubize Artificial Silk Company of America has been appointed selling agents for the products of the American Chatillon Corporation, Rome, Ga., according to Rufus W. Scott, chairman of the board of the American Chatillon Corporation. The arrangement covers both the company's acetate process yarns, marketed under the trade name, Chatelon, as well as the viscose process yarn, marketed as Sunbeam and Sunmist.

BONE-DRY UNSHRINKABLE WELL-FINISHED

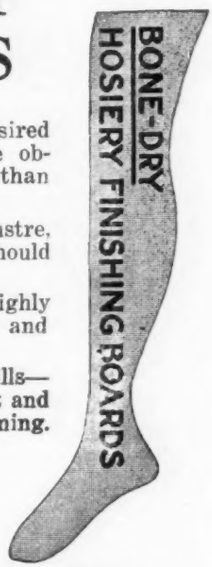
HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.



JOSEPH T. PEARSON & SON CO.
Manufacturers
Kensington and E. Boston Avenues
PHILADELPHIA, PENNA.

Processing Rayon Yarns Scientifically

Giant Conditioning Rooms bring back original moisture content

All of which is tremendously important for the proper processing of rayon yarns because moisture and temperature enter so intimately into the characteristics of rayon yarn.

"Rushes," or special orders will not cause us to change our attitude. This is an inviolate principle. Any practice that is detrimental to rayon during its processing will not be countenanced in any of our plants.

Do your business with a reliable house and your merchandise will be reliable.

Rayon Yarns on Cones, Cops, Bobbins, Spools, Tubes, Skeins, Warps and Beams: Direct, Tub-Fast, Sun-Fast and Indanthrene Dyes.

Plants at

Brooklyn, N. Y.

Allentown, Pa.

Spartanburg S. C.

The YARNS CORPORATION *of* AMERICA
290 Fourth Avenue New York
Processors of Crown Brand Rayon Yarn

The YARN MARKET

Philadelphia, Pa., January 17, 1930.

THE REPORT of last month revealed that many buyers were very careful in their buying due to the fact that they wanted to carry as small an amount of yarn into their year-end inventories as possible. However, in spite of the careful attitude exhibited by the buyers, the number of holdups during the month of December did not exceed those for the same month of previous years.

The bright feature of the past report period was the exceptional credit situation that existed. The fear of incurring bad accounts attributable to stock market losses was entirely removed, which caused the market, from a credit standpoint, to be regarded as in a very sound position.

The present report period begins with the week of December 16th, and during the first part of this week numerous cotton yarn houses received hundreds of requests for quick shipments of cotton yarns, ranging in size from 5,000 to 10,000 pounds. It was reported that in some instances several of the customers wiring in for spot shipments were among those who had previously arranged for postponement of the deliveries due them until after the beginning of the new year. In many cases market stocks seemed to be just as low as consumers' supplies, which made it necessary for the hurry calls to be referred to the spinners, and naturally the spinners boosted their asking prices considerably.

The second week opened with practically no change in prices, and very little, if any, interest was shown by yarn consumers. Yarn dealers asserted that they looked for no change in conditions to take place before January 1st, but that the outlook for good business after that was rather bright. The large majority of yarn houses were making very little effort to promote sales during the week, but spent most of the time discussing with their salesmen the position of customers and planning early January sales contracts. Spinners during this week were running about 50 per cent single capacity.

The next week brought in the New Year and also an increase in the number of inquiries for carded yarns. A good many customers decided to cover ahead for a few weeks at the prices that existed at that time. The price for ordinary quality 30s two-ply warps at this time was 38 cents. Several customers were asking for spot shipments but there were only one or two local houses able to make spot shipment of anything beyond small lots. One sale of prominence that took place during the week was a sale of 100,000 pounds of 20s single carded skeins at 31 cents. This proved incentive enough for a few spinners, that were wavering considerably, to strengthen their prices.

Business placed during the next week indicated that a large number of buyers intended buying only the yarn necessary to buy in order to cover actual requirements. It was pointed out that there was nothing in the cotton outlook to induce yarn buyers to be skeptical about being able to get yarn whenever they desired it. However, an upward trend of cotton quotations during the latter part of the week was sufficient to cause a few of the buyers to enter the market a little sooner than they had intended. Local distributors stated that the business developed during the past ten days in a way justified a more optimistic outlook.

During the next week there was a fair increase in inquiries for carded yarns. These inquiries, however, were based on prices that would allow the dealer to realize little or no commission from his sale. The majority of dealers remained rather firm in their asking prices, with a few of the smaller ones weakening.

Philadelphia prices on January 15th follow:

Single Skeins.

4s to 8s	27½	10s	28½
12s	29	14s	29½
16s	30	20s	31½
24s	33½	26s	34½
30s	36		

Single Warps.

10s	29	12s	29½
14s	30	16s	30½
20s	32	26s	35
50s	36½		

Two-Ply Skeins.

8s	28½	10s	29
12s	30	14s	30½
16s	31	20s	32 @32½
24s	34½	26s	35½ @36
30s	36½ @37	40s	44

Two-Ply Warps.

10s	29½	12s	30½
14s	31	16s	31½
20s	32½ @33	24s	35
26s	36½	30s	37½ @38
40s	45		

Frame Spun Carded Yarn on Cones.

8s	27½ @28	10s	28
12s	28½	14s	29
16s	29½	18s	30
20s	31	22s	31½
24s	33	26s	33½
30s	35½	30s dbl.carded	38½
30s tying in	34½		

Carpet and Upholstery Yarn in Skeins.

8s and 9s 3-4 hard white warp twist	28
8s tinged tubes	25
8s 3-4 hard twist waste	24½

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	43	20s	45
30s	51	40s	54
50s	58	60s	65½
70s	75	80s	87

Single Combed Peeler Yarn on Cones.

18s	40 @40½	24s	44
30s	48½	36s	50½
38s	51½	40s	52½
50s	58		

Merger Announced.

According to announcement made some months ago, on January 1st the T. Holt Haywood and the Dickson & Valentine departments of Frederick Vietor & Achells, Inc., were merged, and their business conducted under the name of Haywood, Mackay & Valentine, Inc., factored by The Commercial Factors Corporation.

It was also announced that, sometime during the month of January, Mr. Haywood would open an office in Winston-Salem, N. C., for the new firm, from which office he will be in direct, quick contact with all the mills represented.

The members of the new corporation state that they feel that the new arrangement will enable them to give their friends and customers, in both the manufacturing and merchandising fields, most excellent service.